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THE SKIN

Its Care and Treatment

ACCORDING TO THE MICHAUD SYSTEM

Teaching every detail of this
important work, in a simple,
concise and practical
manner

THE LITTLE BOOK

OF THE SKIN

McIntosh Battery & Optical Company

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DEDICATION.

To the earnest student who realizes the vital need for thorough instruction in the important work of caring for the skin, this book is affectionately dedicated. That the experience of years may have been sufficient to make this volume a trusty guide to others who are but commencing their work, is the ardent wish of the author.

INTRODUCTION.

The desire to understand the best manner of caring for the skin, and what materials to use in this work, is one that has become very generally acknowledged by intelligent women within the past five years. Before this time, although perhaps quite as many were interested, there was an impression that a poor complexion could not be improved, while a good one needed nothing to preserve its beauty. The first wrinkle was greeted as a natural consequence, even though it appeared at twenty-five in one woman, ten years later in another, and perhaps during school days in another. Crow's feet were expected, and came obligingly, quite prepared to remain. The yellow tinge, so disastrous to the blonde, was immediately labeled as liver trouble, and all of these defects allowed to become chronic afflictions instead of being temporary blemishes.

To the best dermatologists, much of this apprehension is due, for, engrossed by the study and treatment of strange eczemas, obscure skin eruptions and malignant growths, these other matters have seemed so trifling that they have either neglected to pay any attention to this branch, or given advice so carelessly that the patients had not confidence enough in the results to attempt the work. These so-called trifles often make or mar a woman's happiness, and instead of being laughingly told that she is foolish to attempt to defer the coming of old age, and the appearance of the many folds and the sallow skin, she should be assured that the beauty of any skin may be preserved indefinitely with proper care, while poor complexions may be made wonderfully better.

The careful housewife is well aware that constant attention is necessary if she would keep her home attractive. This same rule applies to the care of the face and the body. It has been the aim of the author to explain to women that if they would obtain the desired results, there must not only be the necessary applications, but also sufficient attention to the diet, the daily bath, and the proper exercise.

The maiden should be instructed not only what to do for the skin, but also what to avoid. The wise mother realizes this, and copies the method of the successful gardener. As he with pruning knife and shears clips away the weakening tendrils, and plucks out weeds that threaten to hamper the growth of the vine, so must she watchfully tear away disagreeable peculiarities and weed out harmful habits if she would see the tender bud develop into the glorious blossom.

Instead of being discouraged in the practice of the little vanities so natural to the heart of the young girl, she should be wisely directed, and carefully instructed in the anatomy of the skin, its possibilities and its limitations. The average maiden has an ardent desire to be beautiful. Every heroine she can remember from the "Sleeping Princess" of her childhood days to the mysterious and fascinating production of the modern novelist, has been as enchanting as the writer's pen could make her. Naturally, she, too, dreams of becoming a vision so bewildering that all shall adore her, and seeks impatiently for the aid that shall transform her. Denied the sympathy she craves at home, she will wander forth intent only on her mission, and thus too often becomes the prey of unscrupulous "semi-professionals," who make impossible promises and charge outrageous prices for harmful work.

The awakening from an experience of this kind is bitter

indeed and the result is seen in the soured and suspicious women who doubt the existence of real benefit in anything pertaining to the care of the skin. They will not only refuse to be coaxed into trying remedies themselves, but also use their influence to persuade their friends that all such work is useless. The only argument to be used against the endeavors of people of this type is the very conclusive one of proving to them what may be accomplished by employing simple, natural methods.

There are in reality very few hopelessly plain women. Care will perform wonders for any one, and the earlier in life this lesson is learned the better for the student.

The girl with the Rocky Mountain features, sandy hair and freckles may make herself positively repulsive by pulling her hair tightly back and fastening it in a tight knot at the back of her head, exposing herself with no protection to the skin, in all kinds of weather, and finally by degenerating into a round-shouldered, bony picture of despair. A little attention, a few words of advice, wise direction, and behold, a willowy, smiling vision, the really fine hair loosely coiled about the head, softening the outline of the features, the complexion soft and beautiful as a result of the necessary exertion morning and evening. Contentment has replaced morbid dissatisfaction and a spirit of good fellowship impels her to help others to learn what may be done for them.

The swarthy maiden with heavy, black, bristling brows meeting in a point over the center of the nose, dull, colorless complexion, awkward, ambling gait and oily, coarse skin, is quite as desperate until she learns that the electric needle will permanently remove the point; tiny scissors trim the bristles into the delicate arch, proper care, refine and bleach the skin. Practice in physical culture will soon en-

tirely change the carriage, and if under all this care the color does not appear, a harmless tint may be employed, and behold a different creature, her black eyes glowing with happiness, her presence breathing of good health.

The nondescript damsel, with eyes, hair and complexion that seem to have been selected from a jumble and thrown carelessly at her, has the most difficult time of all. A little study will enable her to find the style she should adopt, and then she must work accordingly. Invisible eyebrows may be coaxed into a well defined line, the fiery freckles frightened away by the use of ointments, the figure will develop astonishingly under proper work, and in short the "ugly duckling" will disappear and graciously give place to the beautiful swan.

So instances may be multiplied, in which a little knowledge has been of inestimable benefit to those who by improved appearance may alter the conditions of their life. Nature's failures are too numerous to convince the student that "whatever is, is right." She must learn to discriminate, and must resolve to spare no effort toward repairing defects that may exist, as well as to use discretion in preserving the perfect skin that is occasionally found. Love of the beautiful is natural and universal, and those who have not the good fortune to be born with all the attributes necessary to the perfect type, may at least stretch out their hands toward the aids that may enable them to remedy the gravest faults, remembering always, that with health as a foundation, common sense as an aid, and perseverance to inspire, the results will indeed be satisfactory.

When it has been possible to know of these facts in youth, so much the better. If not there is still hope, for the clever woman realizes that as she grows older she improves mentally. Ripened by experience, at no time is her intel-

lect more powerful, her wit keener, nor her judgment better than after she has passed the half century mark.

Physiological development has enabled her to maintain the erect carriage, full chest and well proportioned figure of her youth, and she now sees as never before the importance of the daily work, which, properly employed, will banish the lines traced by the gathering years, prevent the wasting of the tissues and preserve the contour and firm texture of the skin.

The power of beauty is universally acknowledged. In all countries, in all ages and by all types of men, poets and warriors, artists and statesmen, susceptible striplings and phlegmatic business men, alike testify to the potent influence of this wonderful gift.

It has been perhaps due to a realization of this fact that so many women have despaired, for after beholding the loveliness of others they who were but meagerly endowed with charms so lavishly bestowed upon more fortunate rivals felt that it was useless to persevere in work which could but make them less repulsive. To women of this type the certainty of improvement so great as to be well worth while has been a wonderful stimulus. And as a consequence the shrinking, self conscious and unattractive woman of thirty-five has often been developed into a social power before she has reached forty. The mere realization of her success so fills her with quiet joy that she unconsciously inspires her associates with an ambition to follow her example.

A wise man once remarked "that to satisfy others one must be self-satisfied." This statement is indeed true and should stimulate the negligent into an effort to make the most of opportunities. The young girl should labor unceasingly to obtain the degree of perfection to which her very

youth entitles her. The woman of thirty may have secured her knowledge later in life, but still not too late to know that by sufficient care she may postpone the appearance of age for years to come. Older women must be convinced that much may be done toward repairing the damages wrought by neglect and carelessness, and all women should be persuaded that it is quite as essential to devote a certain amount of time each day to personal attention as it is to waste hours in foolish gossip, embroidering useless doilies, or in caring for expensive ornaments. The chief ornament of any home is the woman who presides over it, and she should be ambitious enough to realize the importance of work that will aid her to preserve the charms she has, as well as to assist her in acquiring those she may be without.

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CHAPTER I.

THE APPEARANCE OF THE NORMAL SKIN.

The perfect skin is soft, smooth with a transparent luster, elastic and moist, with a coloring that differs greatly in individuals. In some instances it is like pale ivory, in others a pearly white, often a pinkish cast may be found, while certain nationalities possess the peculiar brownish, yellow tints found in the Spanish and Italians.

The exposed portions of the skin are darker than those protected by the clothing, and on close examination the surface will not appear smooth, but covered with the tiniest and finest of lines, some parallel, others intersecting, while in addition a growth of soft, almost colorless hair called lanugo is seen to be abundant. It is due to this peculiarity of structure, with its tiny furrows and elevations and soft down of the "wool hair," that the delicacy of appearance exists.

The skin is about one-tenth of an inch thick, and is provided with a natural oil, exuding imperceptibly under ordinary conditions, and keeping the flesh soft and pliable. Perspiration is excreted by the glands and carbonic acid gas is eliminated, while oxygen is absorbed. Thus, liquids, ointments and substances intended to correct the various defects may also be forced into the skin, and when rapid results are required the necessity exists for frequent bathing in connection with proper manipulation.

The epidermis, or cuticle, is the outer layer of the skin and is exposed to the air on one side and attached to the corium on the other. This exposure to the air naturally keeps the outer layer in a drier condition and it is due to this fact

as well as to the application of friction that the constant casting off of scales occurs. Ordinarily this process is barely perceptible, but when the secretion of oil is not sufficient to keep the skin moist, this scaliness becomes extremely objectionable and great flakes peel off continually, causing the face to look rough and coarse. Under the influence of an irritant or where there is made an attempt to bleach the skin, the same excessive flaking occurs until the applications cease. When the condition is extremely obstinate constant inunctions of oil are necessary in order to keep the skin in even a presentable condition. Hence the value of the flesh or skin foods in cases of this description, as the best of them are made from the finest oils and are readily absorbed by the skin.

The mucous or malpighian layer is the deepest of the outer layers of the skin and is situated directly above the corium. Cones descending from this mucous layer are met by the papillæ extending up so that all the hollow spaces are filled in. It is in this layer that the pigment cells are found and it is in a desire to affect this supply of coloring matter that the various ointments for whitening the skin are applied and rubbed in vigorously. The irritation of the friction loosens the scarf skin and hastens the peeling, while the manipulation assists in the process of absorption. Should the irritation be prolonged greatly there is danger of causing a greater deposit of pigment in this spot, instead of removing the old discoloration. Carelessness in this respect has ruined many faces, for the application of some of the powerful bleaches has produced deep cauterizations and thus left a permanent disfigurement, impossible to remove. No single treatment of the skin should ever be continued after redness or burning has been produced. The presence of this coloring matter in the mucous layer has

been made the subject of a curious experiment in which a bit of skin from a white man was grafted upon a negro, with the result that after a time the grafted portion became as black as the rest of the body.

The corium, or "true skin," is made up of a dense, regular structure of elastic fibers. Under this is a layer of connective tissue and here as well as in the cellular structure is found the fatty tissue. The papillæ projecting from this corium into the mucous layer each contain either the daintiest capillary network or nervous apparatus. The healthy hue of the skin is thus produced and maintained by the tiny blood vessels, while when cold or under the influence of a great shock or terror, the nerve filaments produce the appearance known as "goose flesh."

The layers of the skin as named are the most important, though of course physiologists divide and subdivide them still farther and explain many details which will neither interest nor assist the ordinary student, so no mention is made here of the distinctions drawn by some of these authors. By studying the connection of the various layers it will be seen that the outer layer should be nourished by the proper action of the numerous glands in the lower sections, while the coloring on the cheeks and face naturally comes from the tiny blood capillaries projecting from the corium into the mucous layer by means of the papillæ.

The soft luster of the perfect skin is due to the proper actions of the numerous glands as well as the presence of sufficient subcutaneous fat. Hence any functional or local disturbance will naturally affect the coloring and appearance. In young and healthy people this luster is more pronounced than in those who are older. In fact, one of the first signs of approaching age is found in the disappearance of this peculiar glow and a manifestation of a dry and illy-

nourished condition of the skin as shown by numerous folds, at first very shallow, and afterward deepening into veritable furrows that become rapidly more pronounced unless properly treated.

The normal skin should possess none of these lines until the subject is so far advanced in years that age shows plainly. To the observant student it is apparent that it is more sensible to attempt to correct the various faults by a judicious use of external applications as combined with the necessary internal treatment; than it is to think that a few doses of medicine by way of the mouth into the poor, overworked stomach, can possibly reach every portion of the body and correct every evil that exists.

There is a most peculiar impression among many people that all skins are normal and that the only exceptions to this rule are found in instances where cosmetics have been applied. In reality, there are just as many exceptions to the standard of health in skins as there are in bodies, and it is quite as absurd to say that no skin needs treatment as it is to say that no human being will ever need medical treatment.

The fact that the skin needs constant care to keep it in good condition can nowhere be better illustrated than in mentioning the preservation of the flesh of the neck and arms in almost every woman, whether any care has been bestowed upon them or not. The constant friction from the clothing keeps the pores freed from obstructions, while protection from the sun and air preserves the whiteness. The face, on the other hand, exposed to all changes of temperature, biting winds and burning sun, is naturally affected greatly by this exposure. Discretion in caring for it will to a great extent, remedy the dangers of necessary exposure, and keep the complexion in good condition.

It is hoped that these lines may be convincing enough to prove to the majority of women the necessity of constant care to keep the pores freed from obstructions, the skin from unnecessary defects, and the face free from disfiguring wrinkles and the appearance of premature old age.

The treatments advocated in this book have been practiced for many years with absolute success. The articles are mentioned as used so that the beginner may know exactly how to proceed, as vague directions but confuse the student. The successful woman in business must depend upon unguents of which she knows, if she expects to secure good results. Emphasis has been placed upon the importance of thoroughly cleansing the skin before work of any kind is attempted, because the pores must be in a condition to receive the material applied if the results are to be satisfactory.

CHAPTER II.

WHY CREAMS ARE NECESSARY.

When any oil or combination of oils as found in creams is applied to the skin it becomes soft, pliable and smooth. It is readily absorbed into the superficial layer of the epidermis and soon produces a clear appearance besides preventing undue tension and removing any roughness that exists. Methodical applications of ointments further their absorption into the skin, and even cause them to appear in the blood by way of the lymph vessels. Increase in weight, the pleasing roundness and improved appearance are thus explained as natural consequences after proper work.

As a protecting agent, a good cream is unexcelled, for it forms a water-tight covering that serves to diminish the moisture given off by the skin. Sebaceous secretions, fatty acids of the sweat, and dirt may also be removed by an application of oils, while the use of a thin coating is always advisable in order to cause powder to adhere well. The actual necessity for the use of creams can nowhere be better illustrated than during a trip through the Yellowstone Park. The only people who enjoy this outing are they who realize that their safety and comfort consists in cleansing the skin with a cream made for the purpose and then applying more before dusting on the powder. Water and soap should not be applied until the alkaline water has given place to the ordinary variety. Even then, many experienced travelers hesitate about using much of it and instead, stand loyally by their creams and powder. In fact, there are skins so peculiarly sensitive that no water can be used, and instead the surface must be cleansed with oil of some kind.

The use of seductive ointments and perfumed oils was so very general among the ancients that there was a different mixture advocated for every portion of the body, and as a basis for many of them the fat of an animal was supposed to be necessary. For instance, the pomade used for the feet and legs was invariably made from the animal who possessed most strength and speed. That for the arms and chest was termed Phœnician, while the most costly and delicate oils were reserved for use on the face, neck and hands. There is no doubt that the Greek and Roman women owed the preservation of their beauty to this practice of anointing after the bath, and it may well be urged on the women of the present century as a very necessary process in the art of beautifying, as well as a powerful aid in keeping the skin of the body and face in an excellent condition.

The use of a good unguent or skin food should be recommended for the purpose of massaging not only the face but also the entire body at least once a week after the vapor or steam bath. A good cream is one that may be readily absorbed by the pores, leaving the skin soft and pliable, but with no appearance of oiliness. Ointments are made the means of treating many of the skin affections, as, they may be absorbed so easily into the skin, that in this manner much may be done by way of external application. In any treatments of this kind, it is very necessary that the pores be kept absolutely free from obstruction, so that the oils may be able to penetrate readily.

The knowledge of just what treatment each skin needs is one possessed only by the experienced worker. In many instances there must be a combination of remedies skillfully applied to counteract the various peculiar conditions, and in all cases much perseverance must exist. Many are troubled with abnormally dry skins and with freckles also. The

treatment in this instance must be so directed that the demand for a nourishing oil may be supplied, while also a penetrating remedy may be used in order to affect the abnormal amount of coloring matter in the mucous layer of the skin. In the work of treating blackheads, in which there is an excessive secretion of oil, there must be oil used to penetrate the glands and stimulate them, and the demand for an astringent is also to be considered. So the peculiarities of each individual must be studied and treated. In every instance the use of oils as combined in creams is a necessity.

Although all intelligent workers realize and can explain to their patrons the reasons for applying ointments, there are many ignorant though positive souls who attempt to discredit the efficiency of work of this kind by asserting that the use of creams will make the hair grow. If this were only true, one can well imagine the joy that would be speedily felt in the ranks of bald-headed men. The fortunate manufacturer of such a cream would immediately become famous as well as rich and would be regarded as a public benefactor. Unfortunately at the risk of disappointing many, one must be truthful enough to assert that no ordinary cream will cause the growth of hair.

All skins are covered with the soft wool hair or lanugo. In many instances as people grow older this growth becomes more apparent. Close observation in hundreds of cases has failed to reveal any connection between the appearance of hair and the use of creams. Very frequently, in fact in nearly all cases, this abnormal growth appears also on the arms and legs showing that it is not confined to the face alone. Fully one-half of the worst cases the author has ever seen were found to be guiltless of ever applying any kind of a creme to the skin, while the remainder de-

clared that they were convinced that there would be no connection between the use of a good creme and the growth of hair.

There has been an effort during the past few years on the part of unscrupulous or ignorant manufacturers to produce articles that shall take the place of substances containing oil, and many high-priced and strongly scented concoctions have been advertised for the purpose of massage, having for their chief recommendation the absence of anything like an oil or fat. This, in itself, should be enough to keep any intelligent woman from an attempt to use the articles, for every student of physiology should know from the nature of the skin that it must have oil of some kind applied if it is to be kept in good condition. That much-used term, "skin food," is really appropriate for how many women who have been withered and faded and haggard, years before their time, have had the skin so fed and nourished that they have looked years younger after only a week or so of proper treatment.

CHAPTER III.

THE MANUFACTURE OF CREAMS.

The work of combining the various oils into odorous mixtures is one that appeals naturally to any woman. She who has not this inclination to don a big apron, and stir the foamy substance that is to make her far more attractive, must have either a heart of adamant or be utterly lacking in either imagination or sentiment. Few women ever grow so old or become so dead to their sense of beauty that they can honestly deny all interest in work of this character. And, as we all love to see flowers instead of weeds, well-kept houses rather than ruined huts, so, too, a well-groomed woman with a complexion free from defects will ever be more attractive than one who is lined and yellow from sheer neglect.

The necessity for the use of creams has been so well established that it is useless to add more on the subject, but the process of making them may well need a few lines of explanation. This fascinating art is not without its drawbacks, chief among which is the very serious one that confronts most amateurs—lack of sufficient knowledge. Then, too, the work is not a cheap amusement, for by the time the various utensils necessary have been collected, and the numerous ingredients have been purchased, the outlay is far in excess of the cost of the purchased articles, while in addition there is always a possibility that the results may not be good. Of course, it is absolutely hopeless for any one untrained in the work to attempt the composition of any of the more complicated recipes, as both the equipment and the materials would involve too great an outlay, to say nothing of the necessity for experience in the work. Hence, in the

recipes that follow care has been taken to explain carefully each step, as well as to select only those that can be prepared with a comparatively certain degree of success.

A good almond oil is the basis of nearly every fine preparation. Of course every druggist keeps this oil, but every druggist does not keep the finest variety, as there is not enough demand to warrant it. Thus the woman who wishes to do good work will be under the necessity of purchasing her oil in the twenty-five-pound cans direct from the importers or large drug houses if she wishes to be sure of the quality. Creams made from any nut oils will become rancid under the influence of intense or prolonged heat, and creams made from inferior qualities of oils become rancid almost immediately, while in addition to this unpleasant property they also irritate the skin greatly. All creams are best made in small quantities and should, when not in use, be kept in a cool place with the covers of the jar well fastened down.

In purchasing ingredients care should be exercised to see that they are the best obtainable. A pure almond oil will be of a delicate straw color, clear as crystal, and with none of that strong odor so invariably associated with the ordinary oils. Lanolin is best purchased in pound packages after it has been subjected to the refining process. It has always a peculiar, sticky appearance and possesses a mildly distasteful and extremely distinctive scent. The finest wax is nearly white, not yellow, and comes in small round cakes, while the best spermaceti is usually found in long, white glistening cakes. Cocoonut oil when pure and fresh looks like a ball of snow pudding, though of course the strong odor is never absent. Although other oils are used, the three mentioned are those most generally employed and also most beneficial in effect.

Before attempting to make any creams an investment in an enameled water boiler is absolutely necessary. This should be used for nothing but work of this kind, and with it should come one or two long-handled granite spoons for stirring the oils. In making the cream, care should be observed in regard to the thorough melting of the white wax, spermaceti and other ingredients before the rose water is added. In order to have the mixtures appear the best, they should be well beaten from the time they are taken from the fire until they are cool enough to perfume.

CREAM CELESTE is a very good skin food when made of the finest materials. It is prepared as follows:

Almond oil	8	oz
Spermaceti	2	oz
White wax	1	oz
Honey	1	oz
Rose water	2	oz
Borax	1	oz

Rose geranium oil—sufficient to perfume. The oils may be melted together, and then the honey added and stirred in well. Last of all, the rose water, in which has been dissolved one dram of borax. Enough of the oil of rose geranium to thoroughly perfume the mixture may be used as soon as it is cool.

ALMONDA is the friend of the freckled maiden, though the action is so mild that she becomes a little discouraged at times, for it will not remake her instantly. Still she must reflect that no one inexperienced in the art should be intrusted with the use of chemicals that may be potent alike for good or evil, depending upon the discretion with which they are used. This creme should be applied at night after washing the face with soap and warm water. It is not so

penetrating as the Whitening Creme spoken of elsewhere, but has been used with very good results:

Almond oil	6 $\frac{3}{4}$
Lanolin	1 $\frac{3}{4}$
Spermaceti	2 $\frac{3}{4}$
Cocoanut oil	1 $\frac{3}{4}$
White wax	1 $\frac{3}{4}$
White precipitate	1 $\frac{3}{4}$
Oil bitter almonds	1 $\frac{3}{4}$

Melt the oils together and then add the white precipitate first, mixed with one-half ounce of alcohol. Perfume with oil of bitter almonds.

DELIGHT OF THE HAREM sounds quite oriental enough to enable one to conjure up a vision of some dusky beauty, carefully applying this seductive ointment in the hope of making her warm olive skin look a deadly white. This cream is really used for whitening the skin of the neck and arms temporarily, and is especially useful for the purpose of disguising a bad skin in the evening. It should not be used on the face, as it is too much of an astringent.

Almond oil	6 $\frac{3}{4}$
White wax	1 $\frac{3}{4}$
Spermaceti	1 $\frac{3}{4}$
Paraffin	1 $\frac{3}{4}$
Oxide of zinc	1 $\frac{3}{4}$
Orange blossom oil	20 drops

In this preparation the oxide of zinc should be well sifted through bolting cloth before mixing in with the oils, as otherwise the cream may appear a little gritty. The effect of applying this ointment is most pleasing and it is doubtless to some preparation of this kind that the professional beauties owe their snowy arms and shoulders.

The recipes which follow for the use of creams made

of strawberry and of cucumber juice are said to be highly beneficial. The chief objection to the use of these articles is the fact that they require more time in making and are, of course, impossible to obtain at certain seasons of the year, for it is said that no hot-house vegetable will do for this purpose.

STRAWBERRY CREAM is much used to remove tan or discolorations that are not too pronounced. It is made in this manner :

Almond oil	8 $\frac{3}{4}$
Strawberries	1 qt

Allow the strawberries to simmer in the hot oil for three or four hours, until the greater part of the juice is extracted, and then strain through a cheesecloth bag without using any pressure. Proceed as follows, using for six ounces of the strained liquid these ingredients :

Strained liquid	6 $\frac{3}{4}$
Lanolin	2 $\frac{3}{4}$
Spermaceti	2 $\frac{3}{4}$
White wax	1 $\frac{3}{4}$
Tinct. benzoin	1 $\frac{3}{4}$
Bals. Peru	1 $\frac{3}{4}$
Oil Neroli	1 $\frac{3}{4}$

Add the balsam of Peru to the hot oils and then remove from the fire and stir, beating in the tincture of benzoin and adding perfumed oil last of all.

STRAWBERRY PASTE.—In connection with the use of this cream the strawberry paste has also been used to some extent. It is easily made and may better be given here, as the two are so closely associated :

Fresh strawberries	1 lb
Gum tragacanth	$\frac{1}{2}$ $\frac{3}{4}$
Orris powder	1 $\frac{3}{4}$

Almond meal	1	$\frac{3}{4}$
Juice of lemons	3	$\frac{3}{4}$
Rose water		$\frac{1}{2}$ pt

Dissolve the tragacanth in sufficient rose water to form a mucilage, and then crush the strawberries and mix before straining. Add the orris root and almond meal and last of all the lemon juice. Apply in the form of a thin paste at night and remove in the morning, using the cream immediately afterward and dusting on powder before exposure to the air.

CUCUMBER CREAM is prepared in much the same way, using the same amount of oil and cutting in it as soon as warm three good-sized cucumbers which have not been peeled:

Almond oil	8	$\frac{3}{4}$
Cucumbers	3	

Heat well for three or four hours and then strain through cheesecloth, adding the following ingredients:

Strained liquid	6	$\frac{3}{4}$
Paraffin	2	$\frac{3}{4}$
White wax	1	$\frac{3}{4}$
Cocoonut oil	2	$\frac{3}{4}$
Oil of Neroli	1	$\frac{3}{4}$

A cream that may be used for eruptions that occur so frequently during the summer months is prepared in this manner:

Lanolin	2	$\frac{3}{4}$
Cocoonut oil	4	$\frac{3}{4}$
Paraffin	1	$\frac{3}{4}$
White wax	1	$\frac{3}{4}$
Carbolic acid	1	$\frac{3}{4}$

In this cream the oils are melted and the acid added when the mixture is cool. It is best if applied after washing

the face well with a mild soap and warm water, just before retiring at night.

Another cream most popular with those who suffer from prickly heat or the tiny red pimple that appears on the arms and shoulders is made by using witch hazel instead of rose water, the other ingredients being practically the same as those used in any cold cream:

Witch hazel	3	5
Lanolin	2	5
Almond oil	4	5
White wax	1	5
Spermaceti	2	5

SKIN FOOD.—For those who find glycerine agrees with the skin the following recipe for a skin food will be most acceptable, as in this formula it appears to good advantage:

Sweet almond oil	4	5
Spermaceti	2	5
White wax	1	5
Glycerine	2	5
Powdered borax	1	5
Rose water	2	5
Oil rose	10	drops

Melt the oils together and dissolve the borax in the rose water and glycerine. Add the other ingredients, beating constantly until cold. Perfume last of all.

The list of these pleasing and useful cosmetics is indeed a long one and might be continued indefinitely were it not decidedly impracticable for the ordinary amateur to indulge in the pleasing though expensive pastime of making creams. Why it is, no one knows, but it is surely a fact that while women delight to make these cosmetics, they seldom have any faith in the efficacy of anything they can prepare, and

it is probably due to this as much as anything else that so few women in business now manufacture their own cosmetics.

Buying any of the ingredients in a small way is extremely expensive, while the work of concocting the various articles requires much time as well as a special training. No one preparation can ever be used successfully for all defects, and it requires much knowledge to enable a masseuse to judge the requirements of each skin, as well as to know the best method of treating it. All work to be beneficial must be performed methodically and intelligently, and this applies especially to the use of the various remedies indicated in treatment of the ordinary skin affections.

CHAPTER IV.

WRINKLES AND WHAT CAUSES THEM.

Although the word wrinkle is unavoidably associated with the thought of age, in reality many wrinkles have little connection with the age of the person and are caused by the carelessness of the subject rather than by the weight of years.

Habit lines form early in life, and among those commonly observed, some of which serve to alter the most winning face into one far more prepossessing, may be mentioned the creases caused by elevating the eyebrows constantly while conversing. Lines of this kind are frequently deep and obstinate before the age of twenty has been reached. The straight line found running from the root of the nose up into the forehead, giving to the face a surly, disagreeable expression, is made by scowling or squinting when reading, or inspecting any object that requires close scrutiny. The appearance of these lines in exactly the same portions of the face in every member of a family from one generation to another undoubtedly points to the influence of heredity. It also indicates the existence of gross carelessness, for by a little effort toward muscle control, it will soon be found that any of these habits may be cured, even if every member of the family for the past seven hundred years has insisted upon having them.

Cosmetics containing harmful metallic astringents may also be mentioned as a cause of the appearance of deep repulsive lines, occurring particularly in the cheeks, and generally very difficult to remove. Wrinkles of this kind are especially apt to cause an appearance of extreme age,

even though the subject is a young person, for not only are the folds deep, but the surrounding flesh, as well, seems to be dry and lifeless.

Ill health is another factor in causing lines to appear, and in most instances of this kind the skin seems poorly nourished as well, while the lines appear by the dozen, crossing and recrossing the flesh until the face looks like a bit of patchwork. When the skin has the feeling of parchment, the lines are apt to be particularly hard to erase, and constant inunctions of oil are necessary to make the complexion even presentable.

Mechanical appliances are responsible for much trouble, and the use of the face steamer may be mentioned as being particularly harmful. The intense heat extracts the fat from the tissues and in time produces a flabby condition of the skin. The pores become large and the wrinkles form quickly. Another potent cause of trouble in this respect, may be found in the small glass arrangement provided with a rubber bulb. By placing the glass upon the face and compressing the bulb, the flesh is drawn into the glass by suction. True, the blood rushes to the surface, and the skin becomes uniformly pink, but the mischief comes from the undue stretching that assists in producing fresh lines instead of removing the old ones.

Strongly alkaline washes and bleaches, undiluted alcohol, too much benzoin, and other similar preparations have an intensely drying effect upon the skin, and make much mischief by affecting the supply of oil necessary to a healthful condition.

Another active factor in assisting wrinkles to appear may be found in nearly every bedroom. If the light streams directly from the windows toward the bed in such a manner that the sun's rays can penetrate through the crevices

of the shades or around the edges, falling directly upon the face, the lines about the eyes and forehead will be found unusually deep. This is due to the unconscious contraction of the brows, causing the wrinkles to multiply rapidly, and may easily be avoided by either changing the position of the bed, hanging heavy curtains over the windows, or by using the foot of the bed in place of the head so that the sleeper will not face the light.

Lines of age are those that will come to every face in the course of time, for no power has been found as yet that is of avail in persuading Time to move less rapidly. The appearance of the unwelcome guests that mark the gathering years can therefore be treated only as a matter of course, at the same time making an effort to correct any faulty condition of the skin that may aid them in obtaining a stronger hold. Patient labor will do wonders toward making the traces less apparent, and if the skin is skillfully cared for, lines may not appear for many years. Of course, no face could be interesting without traces of expression, and the woman of a happy disposition who continually smiles whether at trouble or joy will invariably have a face that will indicate this tendency, while the woman who is a victim of melancholia and allows her mood to govern her life will just as positively exhibit to the world lines that betray her weakness. So the observant student who has cultivated the habit of studying human nature will be able to tell much of a woman's life by the appearance of her face, unless she has trained herself into exhibiting no emotion at any time.

Wrinkles that form later in life and that so clearly disclose these secrets are caused by the loosening of the connections of the skin, the disappearance of the subcutaneous fat, and the connective tissue, and the flattening of the tiny

papillæ. Hence the only method that will retard this process is that which consists in gently but thoroughly cleansing the skin in such a manner that the pores may be thoroughly opened and the oil necessary to the nourishment of the tissues may be readily absorbed. This process of absorption must be assisted by manipulation or friction conducted by means of the finger massage. The circulation should be brought into action by exercise and by the use of electricity when necessary. The application of creams and nourishing foods should be made at frequent intervals in a systematic manner in order to replace the constant waste, while baths and correct massage will so tone and strengthen the muscles that the skin will respond readily to the work indicated. In the treatment of wrinkles emphasis should ever be placed on the use of gentle rather than forcible efforts to remove them, and only the most scientific method should be employed in this work. By following instructions and observing the directions indicated in the illustrations the work may be done most successfully.

CHAPTER V.

WHY WE MASSAGE.

Massage is now fully recognized as an important factor in the treatment of many skin affections. It is not only employed to retard the appearance of age, but is also valuable as an assistant in promoting the absorption of the various ointments used in the many skin affections. In fact, so great has been the progress of information regarding the best methods of treating the skin that one rarely sees an "old woman" now. Judging from the presence of children, and grandchildren, a woman will be known to have passed a certain age, but aside from this actual knowledge, her appearance will positively give no suggestion of her real years.

In reality massage bears to the face the same relations that careful cleansing does to the gowns that simply must last a certain length of time. Every woman knows that attention of this kind is necessary if she would keep her wardrobe in good condition, and in time all women will be convinced that they owe themselves at least as much attention as they bestow upon their clothing.

The best manipulation is, of course, done by another person. Not only because the lines can be more easily coaxed into submission by the trained fingers, but also because when one leaves the responsibility of the work to another, there is a feeling of rest and contentment and relaxation possible that may be obtained in no other way. The ideal masseuse is never particularly talkative when giving her treatments. She realizes that in this bustling age there is a demand for repose and so she deftly strokes the deep lines, kneads the flabby muscles, and pats the flesh with a

swiftness and ease that soothes the subject into a half-hypnotic mood of perfect contentment. Treatments of this kind are not only valuable for the physical improvement they impart, but also because they are positively necessary to the well-being of the woman who will not take rest in any other way.

Massage treatments should be taken twice a week when possible. If the services of the professional cannot be obtained, systematic work must be done at home. At least five minutes should be spent each night in rubbing the lines, and if by late hours and suppers the night has been sleepless, or not particularly restful, cold water dashed on to the face in the morning, followed by more rubbing, will make the face look and feel better all day. Just a few moments of attention each day will serve to achieve excellent results.

A skin food or creme is always used in connection with the massage treatment, not only because the materials will be absorbed into the skin, but also to aid the fingers in the work, as otherwise the skin would become red and irritated by the constant friction. In this climate, with its variations of heat and cold, every woman who wishes to appear well must positively pin her faith to the use of preparations of this kind. Nature may have intended all people to have beautiful complexions, but she also planned at the same time many other things, and as lives are lived without any reference to her suggestions excepting to complain because she has not done more, it is rather foolish to blame her for all the troubles that most of us possess.

The country maid is often quoted as an example of health and beauty, but alas! her comeliness is not permanent, and at thirty the buxom lass has lost her roses and most of her teeth. The cheeks are hollow, the forehead lined. Streaks of brown invade the tan and make the complexion

hopeless, while round shoulders aid to make her look every day of fifty. The worst of the matter is, she feels it, too, and is assured that the best years of her life have passed, while her city sister of the same age blooms out like a rose, feeling that life is just commencing to be of the most interest.

Physiologists tell us that the majority of people are not perfectly developed until they have passed twenty-eight years. Some of the muscles are only then perfectly capable of doing the work required of them. If this is true, the period of maturity may well be advanced another ten years and fifty should find a woman at her best. The majority of intelligent women are at their best at this age, but some of them who have not progressed so rapidly still feel dubious of the propriety of making an effort to appear youthful and look forward with dread to an inefficient and unenjoyable old age.

However, each day brings more recruits to the ranks of the hopeful, and as information becomes disseminated widely more women will see in the gathering years the time when perfected mentally, and in good condition physically, they can really accomplish great things.

Massage is naturally the one great factor in producing the best results in work of this kind, and of all forms of massage, nothing can give the benefit that the manipulations of the finger-tips bestow. Many devices have been invented and advocated. Many are excellent when combined with the original form, but all must be considered subservient to the soft yet forcible touch bestowed by the fingers of the good masseuse.

The cleansing process advocated as a necessary part of *every treatment* is based upon the requirements of the skin. The use of tiny mallets and a small roller are indeed valu-

able as adjuncts to the best work, but cannot be regarded in any other light. All work must emphatically be well performed if the results are to be good.

HOW TO PREPARE THE FACE FOR MASSAGE.

One of the greatest detriments to successful work is the fact that cremes are rubbed into skins not properly prepared to receive them. The already obstructed pores cannot absorb the unguents unless some cleansing process is attempted. Hence the best masseuse will always carefully cleanse the skin before giving a treatment. To do this, she will use the automatic or water massage, because the tiny cup-shaped affair is so constructed that it cannot stretch the skin, although it does by means of suction hold it to the rim of the tiny cup while the water passing over it gently lifts the flesh from its accustomed grooves, thoroughly cleanses the pores, and stimulates the glands to renewed effort.

In order to assist in this cleansing process, the face should first be coated well with some cleansing cream such as the lettuce. After a few moments this may be removed by the aid of a bit of cotton or a soft towel, leaving just enough of the oil on the face to allow the cup to move easily over the surface. Then the rubber bag or enameled supply can may be filled with warm water, to which one-half of a cup of saturated solution of borax has been added to three quarts of water. Borax is used in this instance because it is one of the best cosmetic agents, is absolutely harmless, and has a mildly cleansing action on the skin, thus making an efficient aid to the water massage. Illustration (Figure 1) plainly indicates the method of using the massage.

The tiny cup should always be sterilized thoroughly be-



Figure 1.
Using the Water Massage.

fore using, and a small wire inserted and pulled through both the inlet and outlet tubes to see that they are perfectly clean from any obstruction. After the bag has been hung at least six feet from the floor and the end of the outlet tube has been immersed in water so that the suction will be complete, a little water should run through the cup into the vessel to show that the action is perfect. Then it may be pressed gently to the face, the cut-off on the tube unclashed, and as soon as the suction is well established the work of massaging is commenced by moving the cup gently over the face as shown in Figure 1. The directions taken in the use of finger massage may to a certain extent be imitated in the use of the bag. The suction should be sufficient to keep the cup attached gently to the face with no especial pressure excepting over the forehead, and up each side of the nose where some water may be spilled until practice has made perfect. If one is desirous of using greater suction on some parts of the face this may be arranged by hanging the bag higher, and for this reason it is always well to have the height at which the bag is hung regulated by a pulley. It may then be raised or lowered as desired with little effort. Of course this treatment of the face should also include the neck, as otherwise the difference in color will be too apparent.

As soon as the warm water has been exhausted the face should be dried by patting with a soft towel, and a skin food applied in order to facilitate the work of finger massage. In using anything of this kind on the face, care must be taken to avoid applying too much, as the fingers will slip, instead of maintaining their hold and the massage cannot be administered properly.

CHAPTER VI.

HOW TO MASSAGE.

The work of massaging the face is not one that can be learned in two or three lessons or by means of reading a few lines on the subject. It is a study that takes both time and practice. Results will be excellent in all cases that are studied and worked upon carefully, but unless the work is done in this manner nothing worth while can be accomplished.

The system of massage advocated in this book is one that is based not on the pet ideas of one or two people, but on the strong foundation of the requirements of the skin as known from the study of physiology and anatomy. Not only the muscles have been considered, but the positions of the nerves and blood vessels have also been a matter of much study and as a consequence the method illustrated, when properly carried out, will indeed do much for the patient. The illustrations not only indicate from the position of the arrows just what direction the manipulations are to take, but also show just when the rotary motion is of most benefit, by the presence of the spiral. Most of the work should be done with the soft tips of the two first fingers excepting when in massage of the cheeks or neck or chin the flat fingers of the hand are indicated.

In this as in other work the hackneyed phrase may be well repeated that a "masseuse is born, not made." This need not deter others from learning the work and doing good work, but one must also remember that in the practice of massage as in other occupations demanding an intimate knowledge of human nature, the question of person-



Figure 2.
Erasing the Long Lines.

ality must enter. The woman who can infuse her patients with a belief in her power to aid them does a double good, for she also rests and soothes them. The work that counts is that methodically and carefully performed with no noise or bustle, and with an absolute devotion to the manner of treatment.

Massage is to the face what careful pressing is to a gown. Both processes prolong the appearance of freshness far beyond the period generally allowed. The manner of performing the work is naturally of much importance and the most successful masseuse is she who is a student, ever alert to grasp new facts and to apply the results of her knowledge and experience when the occasion presents itself.

The lines on the forehead are generally rather obstinate to erase, as in the majority of people the habit of raising the brows continually while conversing or of squinting the eyes while attempting to do fine work has made the straight creases between the eyes and the horizontal folds extremely deep. In illustration (Figure 2) the proper motion for erasing the long lines is seen, and the tips of the two first fingers are used for this purpose, pressing gently but firmly on the flesh. The fingers of one hand move down toward the brow, while those of the other move toward the forehead, thus passing and repassing continually while the process is continued. After a few moments' work the effect will be seen to be remarkably pleasing, as even the deepest lines yield to the gentle pressure.

The vertical lines between the eyes are best rubbed as indicated in Figure 4, in a rotary motion made by pressing the fingers firmly upon the flesh and then describing small circles. In this work only the fingers of one hand may be used for the massage, though the two first fingers of the



Figure 3.
The Lines about the Eye.

other may be used for keeping the flesh in place. When these lines show a tendency to spring back into place almost immediately, it is well to smooth out the forehead until it is free from lines and then paste bits of court plaster across the lines in such a manner that they cannot form again. This little precaution is extremely valuable and when applied during the first part of the treatment often assists in the work of making the face appear better. The fact that the court plaster prevents contraction of the brows reminds the patient that the habit may be broken by the exercise of a little effort.

The lines radiating from the eyes are apt to form the earliest of any, and often the deepest and most difficult are indicative of nothing more than an extremely merry disposition. Women who have much trouble, physical or mental, are also apt to have deep lines, while those with weak eyes are especially afflicted. In Figure 3 the correct motion for pressing out these lines is indicated. The flesh is held between the thumb and forefinger of the one hand firmly while the two first fingers of the other are used to rub down across the lines, and in a gentle rotary motion beneath the eyes. Figure 5 shows the manner in which the eyelid is to be rubbed, and Figure 4 indicates the rotary motion used directly below the eye. This work about the eyes is most particular and must be carried on very gently indeed. Where there is much bagginess and puffiness beneath the eyes there should be a great deal of the cold water used in the water massage treatment, and the rotary motion should be very light, leaving most of the work to be done by the mallets for the gentle tapping motion stimulates without stretching or pulling. The massage from the corners of the eye may be continued up to the temples, rubbing as indicated in Figure 4.



Figure 4.
Massage—the Rotary Motion.

The nose may be massaged as indicated in Figures 4 and 5. In this work the motion may be continued down from the space between the eyes across the tiny lines that sometimes form each side of the nose. From the bridge down to each nostril the pressure may be firm or light, according to the results desired. People with thick nostrils generally desire to have them made as unobtrusive as possible, and the work of massage will accomplish a great deal in so affecting the cartilages that the thick appearance may be effectively subdued.

The cheeks, as indicated by the arrows, are best treated by rubbing in the manner shown from the center of the face outward. For this work it is well to use the flat portion of the hands and in rubbing, watch carefully to see that no new lines are rubbed in around the eyes or temples. The deep lines running from the corners of the mouth to the nose may be rapidly rubbed out by this method. In Figure 4 the arrows indicate that attention should also be directed to rubbing the flesh below and directly in front of the ears also, as small lines forming there soon develop into perfect furrows unless promptly discouraged.

The mouth is peculiarly difficult to manipulate, both because the lines about it are apt to be sharply defined, and also because the fingers are apt to slip away from the yielding surface. In Figure 5 the best method is illustrated. The forefinger is placed in the center of the circle and the thumb and second fingers are placed at the corner of the mouth and then drawn slowly toward the center. This may need to be repeated a number of times before the exact motion is acquired, as the flesh is so flexible. The lines are little half circles shaped thus () at the corners of the mouth and are best obliterated by rubbing from the mouth in the direction indicated by the arrows.



Figure 5.
Massage of the Eyelid.

The chin is massaged as shown in Figure 4, the circular motion may be done by the two first fingers or else the chin may be grasped firmly in the hand and a twisting motion from side to side given. The flabby flesh or baggy portion directly beneath the chin may be made much less conspicuous by using the proper motions very frequently. As indicated, the stroking is to be done from the center down toward the neck. This work can also be aided greatly by the use of the mallets, the electric vibratile, and much cold water in giving the water massage. The flesh will become firm and solid and the tendency to flabbiness will disappear gradually under treatment.

The neck may be rubbed, as shown in Figure 6, by using the four fingers held flatly on the flesh and drawing them back from the center always. Never attempt to rub the neck up and down at the sides, but always in the same direction toward the back. The deep lines that form back of the ears and run toward the front may be easily kept in suggestion by directing much attention to this spot in the use of the water massage. When the neck is at all discolored, as after the use of high or stiff collars the massage may be given with the whitening creme, thus accomplishing two things at the same time in the way of bleaching and removing lines.

The finger massage finished, the next step is to once more fill the bag, this time with cold water, to which half a cup of saturated solution of alum has been added. The use of this cold water produces a glow and a feeling of exhilaration hard to describe, but pleasant as well as beneficial to experience, restoring tone and firmness to the skin. The use of the cold water is especially to be recommended on and about the eyes and forehead, as well as on the sides of the face near the temples. When the supply has been ex-



Figure 6.
Massage of the Neck.

hausted the face is dried by softly patting it with a fine towel and the astringent creme applied before commencing the mallet treatment.

The astringent is best applied a little at a time—that is, it is advisable to apply it first to one side of the face and then to the other, rather than to cover the entire face at once. Just enough is used to cover the face and then the treatment commences as shown in Figure 7. Some operators prefer keeping one mallet stationary while tapping with the other. Others declare it is best to use both at the same time. In actual practice, experience shows that both methods give good results. The tapping may be given more vigorously on the cheeks and beneath the chin, while about the eyes and on the forehead the lightest motions must be used. This work does much to keep the flesh firm, and though important as part of the treatment, need not consume more than four to six minutes. After it is finished the fingers should be rubbed carefully over the face and all suprefluous creme removed by the use of a bit of cotton. Powder should be dusted on as a protection from the air.

If the face massaged is that of an elderly woman, or if the skin seems poorly nourished, the use of electricity is advisable in place of the mallets. For this purpose the current may be used immediately after the supply of cold water has been exhausted, and may be administered through the finger-tips as illustrated, or better still, by means of the vibratile. The face should not be treated by electricity for longer than ten minutes and the skin should be powdered as usual after the treatment is finished. Very severe cases where the lines are unusually deep and the skin, exceptionally dry in appearance, should be treated daily if possible, and a sensible diet, with sufficient exercise, recommended. Improvement is absolutely certain, though, of course, it will



Figure 7.
Massage with Use of the Mallet.

not be as rapid in older women as in younger ones. The necessary point is persistence, and if the woman troubled with lines is also endowed with a will, the work will assuredly do all that can be wished.

CHAPTER VII.

BLACKHEADS, PIMPLES AND MILIA.

One of the most difficult tasks assigned to the masseuse is the treatment of the loathsome pimple and blackhead cases so extremely common among young people of both sexes. The demand for this work has never been so great as it is at the present time, for it is only within the past few years that people have realized that affections of this kind could be termed skin diseases rather than blood disorders. Still, notwithstanding the interest manifested in the work, comparatively few of the operators even in the largest cities either understand or practice the art of improving skins so afflicted.

In fact, even well-informed parents so far forget their knowledge of physiology as to declare the blackheads should not be removed, but allowed to "run their course." Their awakening has been indeed bitter, for ordinarily the result of neglect in these cases terminates in most repulsive eruptions of pimples filled with pus, causing the skin to appear as though it were dotted with festered lumps. In many instances the flesh has become permanently thickened, and the complexion made dull and muddy by this failure to take the proper treatments.

The great secret of success in this work is in the exertion of constant and untiring care. If all cases of blackheads were taken in hand immediately, and persistently worked upon until cured, there would be more good complexions to be seen, while obstinate disorders of this kind would indeed be rare.

The term "blackhead" really is not one used by those

who wish to be correct, but it is so descriptive that it has become commonly accepted and is universally known. The text-books refer to these obstructions as comedones, while many people still persist in declaring that "flesh worm" describes them perfectly, at the same time insisting that the pests are really alive. In point of fact, whatever may be the term used, these much-discussed and troublesome invaders are nothing but fat, white plugs, formed by accumulations of the sebaceous secretions that persist in blocking up the pores and thus preventing the glands from performing their functions.

Although at one time supposed to indicate uncleanness, blackheads are so frequently found that the old idea has given way to another in which all authorities declare that they are caused by some peculiar local condition and do not necessarily indicate anything beyond this fact, though functional disturbances and lack of sufficient nutrition may be cited as disturbing elements. However, the majority of cases are found in young and robust people who are otherwise models of physical excellence, so this latest idea seems to be based upon sound reason.

There are many varieties of these black plagues, all of them requiring much attention and earnest work before they can be persuaded to leave. Some are fine and so tightly embedded in the skin that it seems impossible to dislodge them. Others are large and coarse, and even protrude above the surface, leaving deep pits in the skin when removed, thus making much massage necessary in these spots. Still others seem to possess a tendency to fester, and upon pressure, not only the blackhead but pus comes out at the same time. All of them require the same treatment, for if the pores are to be made to appear as they should and the glands are to perform their natural functions, these

obstructions must be removed and the applications of ointments made that will assist in the process of reducing the size of the enlarged pores by restoring tone to the glands.

In removing blackheads care must be taken not to bruise the tissue, and the habit of squeezing the skin between the thumb nails, using a watch key or any instrument not especially intended for this purpose is to be strongly condemned. The use of the face steamer before the work of pressing these blackheads out, is also injurious, as the fat is extracted from the tissues by means of the intense heat and this increases the tendency of the skin to scar. The comedone extractor is provided with a tiny scoop at one end and is made with either a needle point or a knife at the other. This instrument produces the best effect, for it not only removes the blackheads easily by means of gentle pressure, but it also marks the skin but little, and never permanently scars or bruises the flesh.

HOW TO PROCEED IN THE BLACKHEAD AND PIMPLE WORK.

First of all, the face should be cleansed by anointing it with lettuce cream, and using the automatic massage and very warm water. All superfluous creme may now be removed from the skin by the use of some absorbent cotton, and the flesh well washed with a three per cent solution of formalin, using for this purpose a soft cloth or some of the cotton. The hands, of course, have been scrubbed with soap and water and immersed in an antiseptic solution, and the instruments cleansed as directed in the chapter on sterilizing. The tiny scoop on the end of the comedone extractor is now used to press down at the side of each blackhead and gentle pressure exerted in order to force it out. If it seems unusually obstinate it is best to pass on to the next one or else use the needle point for puncturing the little fold

that sometimes forms over the black dots. It is best not to remove too many at one time, and not to irritate the flesh very much at first, as the skin is apt to be extremely tender for a time. Pressure about the nose or on the forehead is rather painful and much care should be exerted when working on these sections of the skin. In Illustration 8 the use of the comedone extractor and method of re-



The Comedone Extractor.

moving blackheads is nicely depicted. After all that will come out easily have been removed, the acne cream is applied, and massage with the finger-tips follows, pressing with the balls of the fingers, especially upon the parts that have been treated. This treatment is especially directed toward improving the nutrition of the flesh and is a most important part of the treatment. After about fifteen minutes' work the bag may again be filled with warm water and used as before and the treatment finished by using the cold water.

The work of treating pimples is to many so repulsive that they refuse to even consider it. However, when one considers the actual benefit not only physically but mentally that will come to the one who is properly treated, this repugnance will usually vanish, and instead a genuine interest in the work will be manifested.

There are so many varieties of pimples that the very list of names would be confusing, hence in speaking of them they will all be classed under the very general title so commonly used. Those found either in connection with blackheads or alone are invariably filled with pus and look red



Figure 8.
Using the Comedone Extractor.

and angry. They will sometimes appear in certain parts of the face, and after remaining several weeks will vanish, only to be replaced in a week or so with another pimple in precisely the same place and quite as obstinate as the first one. Other pimples will appear and itch so intolerably that it seems absolutely necessary to scratch the skin. The finger-nails thus convey the infection from one part of the skin to another and as a consequence the entire face becomes broken out in a disgusting eruption. In all cases, the only way of permanently removing and curing these pustules is by observing the following instructions:

The skin should be cleansed and prepared as directed in blackhead work, and of course the same precautions observed in sterilizing instruments and in preparing the hands. The sharp end of the curette should then be employed to open the pimple and the tiny scoop used for pressing out the contents. After all the pus or cheesy matter that will come away easily has been pressed out, the cavity may be entered by a fine-pointed needle attached to a hypodermic syringe and conveying a stream of dioxide of hydrogen. This must be injected carefully, a little at a time as the pus unites with the dioxide to form a sizzling white foam. The injections of the dioxide should be continued until no more foam appears. The method of using this syringe is plainly shown in Illustration 9. As, in the blackhead work, caution should be observed, as to opening many pimples at a time or many in the same locality, for the face frequently is extremely sensitive and it is impossible to do much work at a sitting. After the pimples have been opened and the contents expressed, deep massage should be given with the acne cream and the treatment finished by the use of the hot and cold water and the automatic massage and mallets.



Figure 9.
Using the Hypodermic Syringe.

In case there is any fear about using the hypodermic needle, much good may be accomplished in this work by placing on the skin sheets of absorbent cotton soaked in the dioxide of hydrogen. If the blood flows freely from these incisions, so much the better, as this assists greatly in carrying away the effete matter.

Small pimples in which the pus seems upon the point of bursting out should all be opened and the skin covered with the sheets of cotton soaked in the dioxide, after pressure has removed all of the contents that will come out readily.

In many instances, where the face is covered with pimples and treatments have to be continued for some time, the smaller ones that have not been touched will gradually grow more and more minute and will finally disappear. When this tendency exists, it is, of course, unnecessary to open them.

The scars left from these incisions are generally invisible. Of course many instances have been quoted where people have been scarred for life. This has been where the instruments have not been properly sterilized or where the patient, unable to keep her fingers away, has so irritated the flesh that the inflammation has persisted for a long time. Pimples opened in the usual manner at home by the aid of a cambric needle, or any other instrument that happens to be about, usually do leave a dull purple scar that takes months to vanish and in some instances may remain permanently. Professionals are so careful in their work and in the use of nourishing ointment on the skin, that after the course of a few days no obtrusive mark is visible, and in two weeks or so the skin is generally smooth, as can be seen in Figure 10.

In a few instances, where the pimples seem obstinate about disappearing and where there is a dread of making



Figure 10.
A Smooth Skin After Skillful Work.

a fresh incision, the use of the negative needle has been of much benefit. At least four cells should be used, and the needle should be thrust into the skin for some depth, making each insertion for about one-half minute and selecting at least four points for the purpose. The mallets may also be employed after the usual massage, and the brisk tattoo serves an important part in improving the nutrition of the skin. After every treatment a little powder should be dusted over the skin before the patient ventures into the air, as following the use of so much hot water and massage the skin is naturally extremely tender.

The results of these treatments are invariably all that can be expected when the work is properly done and there is no grave disorder of the system. Even where there are other complications the use of these antiseptic preparations on the skin will positively improve it greatly. Ordinarily the statement may be made that every case with no drawbacks in the way of physical disturbances of any importance will be permanently cured. Even after years of neglect the greatest of changes can be made in skins that seem absolutely hopeless by going at the work systematically. In those who are young, and where the disease has not become chronic, improvement is often most marvelous.

Unfortunately for both the masseuse and the patient, they seldom meet until every other method recommended by every authority has been tried. This leaves the masseuse not only with much work to do, but also with more to undo, for frequently the efforts made to abolish the pimples have been the very things that should, under no circumstances, be attempted.

The masseuse who achieves the best results will be she who plainly and honestly explains to her patients the method she uses and who makes them realize that not only her

efforts but theirs are necessary if the work is to be successful. She must impress upon them that these afflictions have in a manner become "habits of the skin," and that like other habits, time will be required to correct them. She can make no promises as to the length of time required, for, as in everything else, it is impossible to definitely promise relief by a certain date, owing to the uncertainty in regard to the manner in which the skin takes the treatment. In some instances the improvement in two or three weeks is wonderful; others require a month before much of a change can be seen, and all skins require treatments at intervals for some time, as there is often manifested a tendency to relapse unless the work is continued long enough.

In small towns it is often impossible to find a good masseuse, so in this event it will be necessary for the patient to do the work at home. Of course, the progress is slower than when the treatments can be taken from a professional, as it is nearly impossible to obtain the deep massage except when given by another person. Upon this one thing much hinges, that when there is even the slightest chance to obtain treatments they should be taken in order to obtain the effect of the finger massage on the skin. Extremely difficult cases need at least one hour per day for treatment, lighter cases require, say, two treatments a week or work performed every other day, while ordinary cases may be treated every fourth day until much improvement is manifested. After that time once a week will be sufficient.

CHAPTER VIII.

DIET AND DIRECTIONS FOR HOME WORK IN CURE OF BLACKHEADS.

When work must be done at home without other assistance it must be performed systematically if the results are to be pleasing. One of the most important requisites is in the use of a good cleansing agent, for even after the pores have been freed of the plugs, there is often a tendency toward the formation of new ones. The ointments are twice as efficacious when readily absorbed, hence the cleansing agent must be used frequently and thoroughly to further this end. If the skin is dry, sensitive and easily irritated, it must be cleansed each night with soap practically neutral in reaction. If on the other hand it is not only speckled with blackheads, but appears to be oily and greasy, the tincture of green soap should be used. This is made as follows:

Tincture of green soap:

Green soap	4 3
Alcohol	4 3
Ether	4 3

Dissolve the green soap in the liquids and use by pouring a little into hot water or directly upon the washcloth and then immersing it in water. The cleansing must be religiously done each night and the special cream (acne is the best) should be rubbed in well with the tips of the fingers after this process. In the morning the face may be washed in cold water and the antiseptic lotion applied with a sponge. If the skin seems unduly irritated by this, the

lotion may be diluted by pouring a little into a bottle containing some water. Then gradually the full strength may be used. If the skin appears badly, and the patient feels embarrassed about going out in public the acne cream may be applied and rubbed in well and the vegetable powder dusted over it as a sort of disguise.

This work must be done every night, of course, even when under treatment by a professional, and it will be noticed that the rubbing recommended has a remarkably good effect on these obstinate little eruptions, for very frequently, by applying a little acne cream and then using the ball of the finger for massage with deep pressure, the pimple that is just appearing will be persuaded to depart.

The use of the comedone extractor may be continued as described, and at night before retiring after washing the skin well with the warm water the little scoop may be used by pressing gently at the side of each blackhead and endeavoring to remove as many as possible without producing much inflammation. The automatic massage may be easily used after a little practice and will be valuable in making the improvement more rapid.

The diet is most important and should be closely watched. One of the greatest skin specialists who uses this method of treating his patients and who especially advocates the comedone extractor and the deep massage is also most anxious in regard to the diet adopted. The most difficult cases are placed upon a diet of bread and milk without *too* much bread. Little meat is allowed excepting where the patient is deficient in blood, and the following articles of food are absolutely denied in all cases: Pastries, cakes, rich gravies, salads, liquor, spiced food, fried foods of any description and all sweets. The articles that seem most difficult to abstain from using are the sweets and pastries. By

urging and insisting, fruit may be substituted for these dainties and the effect has been to so change the appetite that the forbidden foods have not been desired.

Constipation must positively be abolished; the woman or girl who expects to look well while in the possession of a torpid liver may as well make up her mind to be disappointed. In addition to the use of laxatives it is well to regulate the bowels by eating as much fruit as possible and also by physical culture exercises, especially those in which these organs may be affected. Drinking a glass or so of warm water a half hour before meals will also be most effective, especially when followed by eating foods that are properly prepared.

Bathing is most important, and a very warm bath should be taken at least three times a week, with a sponge once a day over every portion of the body so that all of the pores may have an opportunity for excreting the effete matter and absorbing the materials applied. When the skin is extremely oily, the bath made by adding the rock salt and ammonia to the water may be used with good effect. The liquid sulphur bath, also mentioned in the chapter on bathing, will be found extremely beneficial in cases of this description. Care must be taken, however, in using this bath to wash the face with clear water both before entering and before leaving the bath.

Electricity is equally essential and should be employed as suggested. In case the patient has obstinate pimples that have recurred constantly for months and years, after they have been opened and the pus extracted, the cavities should be entered with the needle attached to the negative pole. This should be done after the pus has been removed excepting in instances where it seems impossible to press out the cheesy matter. In this event, the needle may be in-

serted several times from different directions until the matter becomes sufficiently affected by the heat to become softer and press out easily. The positive needle is not indicated in this treatment, as the resulting scar is apt to be permanent. After the pimples have disappeared fairly well, and there is a desire to improve the nutrition of the skin, the bipolar method may be used as illustrated and the lotion forced into the skin, using a treatment that lasts for about fifteen minutes. In addition to this work the vibratile may be employed for the stimulating effect, though it is well to employ the bipolar method first.

The masseuse will usually obtain better results in the treatment of blackhead and pimple cases than the physician, because she spends more time upon the after treatment. All specialists insist upon the importance of massage as of aid in restoring tone to the skin, but they object to the labor involved, and after opening the pimples and removing the blackheads dismiss the patient with either no massage, or else so little that the effect is not worth mentioning. In this work every detail must be considered and every aid suggested intelligently employed, if the desired effect is to be obtained.

The suggestions outlined here may seem to the casual reader a bit difficult. In reality they are most simple and the refined and sensitive woman who realizes the importance of possessing a clear and attractive skin will most assuredly not object to the amount of labor involved; and, when one contrasts the repulsive and loathsome condition that results from eruptions of this kind made even worse by the presence of innumerable blackheads, no task will seem too arduous if relief can be obtained. The presence of some disgusting disease is invariably thought by the multitude to be indicated by an eruption of any kind, while the semblance of

uncleanliness is so marked that it is impossible to imagine a person so afflicted as really being clean. Actual practice so quickly proves that it is unnecessary to possess these pests, that any one who is sufficiently ambitious will devote every spare moment to the work, sparing no effort to rid herself of the unsightly blemishes which not only disfigure her face but also disturb her peace of mind.

MILIA.

An affliction almost as discouraging as blackheads, although it possesses the distinction of being less repulsive, is that known by the scientists as "milia" from the word "miliun" meaning millet seed. This name so aptly describes the appearance of the skin that it is indeed happily chosen for the tiny, hard lumps sometimes yellow and again pearly white, varying in size from a small protuberance to one the size of a large pin head, resemble more nearly than anything else, the appearance of seed scattered over the face. Of course these same scientific people who have bestowed this appropriate name have spent much time in attempting to find out why this condition exists, and have finally ended by deciding that it is purely a local affair, having little or nothing to do with the condition of the body.

As internal medication seems powerless to affect this condition, it is well to consider the best means of applying the external treatment for each tiny seed; whether embedded in the skin or projecting above the surface is well protected by a singularly tenacious little cap or sac that must be opened by some sharp instrument such as a large needle or the sharp end of the comedone extractor. The lumps must then be pressed out and the cavity thoroughly cleansed to do away with the chance of any recurrence and the cure will then be permanent.

The face is prepared as in the treatment for blackheads, by the application of a cleansing creme, and the use of warm water and the automatic massage. It is then carefully washed again with a three per cent solution of formalin, and the sac opened by a sharp instrument. The small cheesy lump is then teased out, and the cavity entered by a sterilized needle, dipped into a forty per cent solution of chromic acid. The sac is often surprisingly difficult to penetrate, and even after it is opened the milium sometimes remains obstinately attached to the upper surface, requiring the expenditure of much skill in order to dislodge it without injury to the skin. Naturally some discretion is to be exerted in this work, as it is often unwise to remove many of the milia at a time. Experience alone can teach how to judge each individual case according to its peculiarities, how much pressure to exert in coaxing these intruders to depart, and how many to remove at a treatment. Care must be taken to avoid any chance of a local inflammation and sensitive skins will be difficult to work upon long at a time.

In some cases the face will become covered with tiny red scabs, after the milia are removed. These scabs must not be removed but allowed to dry and drop off, thus making the danger of scarring much less. In others, the milia are so small that the use of the needle or knife seems almost impossible. In cases of this description the finest iridio platinum needle attached to the negative pole of the galvanic battery may be inserted in each little lump for a moment, and as a rule the effect is all that can be desired. In very obstinate cases the use of the electric roller is a very excellent supplement to the knife or curette, and treatments may be given every other day.

After treatment consists in using the automatic massage with warm water as before, followed by the use of the deep

finger massage given the same as in the blackhead treatment. The same ointment, acne cream, is employed with very good success, as the astringent properties are so marked that the places operated upon seem to heal more rapidly when thus worked upon.

In this work as in blackheads the chief requisite is in persistence in a faithful endeavor to follow directions, not occasionally, but as specified. In addition to the local work it is well to bathe frequently in warm water and to exercise methodically.

CHAPTER IX.

CHLOASMA.

The appearance of yellowish brown patches upon the face has not only caused much mortification but also the most strenuous efforts to banish. These so-called moth or liver patches not only appear upon the cheeks, forehead, upper part of the lip and neck, but are also found on various sections of the body, and although for many years said to have been caused by either a nervous or functional disease, they very frequently appear without the least apparent reason and remain quite as obstinately as those that are caused by disease. Many patches of this description either precede or accompany physical disturbances, also remaining long after the cause has disappeared, thus making local treatment a necessity, if relief is to be obtained.

The coloring matter is, as explained in a previous chapter, situated in the rete malpighii and also to some extent in the corium, both deeper layers of the skin. The applications of powerful remedies for the purpose of bleaching the skin have, instead of curing the trouble, augmented it by causing an inflammation which has resulted in an increased deposit of pigment at this spot, lasting during the lifetime and impossible to remove.

If the application of such remedies had been continued only until redness appeared no such trouble would have occurred. Hence in treating any such difficulty care must be taken to warn the patients against a too vigorous use of a remedy in an effort to become beautiful immediately.

In all external treatment of course the object is to have the material employed absorbed as quickly as possible and

to have it so well prepared that the work shall be directed particularly to the affected portions. To assist in this process of absorption it is necessary that the skin should be in the most cleanly condition and this is only possible when baths are taken frequently and the pores are kept free from obstructions. The average person has about fourteen square feet of skin to keep clean, and in this surface are approximately 2,000,000 sweat glands and 500,000 oil or sebaceous glands to assist in throwing off the waste matter. The daily bath will thus be seen to be a common necessity if the skin is to be kept as it should be.

In the treatment of pigmented portions of the face or neck, the use of the cleansing cream and automatic massage are continued as before, and as soon as the warm water is exhausted, if the bleaching process is to be quickly done, the skin may be covered with compresses saturated in the following solution:

Dioxide of Hydrogen.....	4 $\frac{3}{4}$
Lemon juice	2 $\frac{3}{4}$
Tinct. of Benzoin	1 $\frac{3}{4}$
Water	2 $\frac{3}{4}$

This compress may be left on until a tingling or smarting is felt and then removed and the face washed well with distilled or soft water and finger massage given, using the whitening creme for this purpose. The cold water may be used or not to finish this treatment, depending upon the condition of the skin. Some faces are so easily irritated that but little manipulation may follow, while with others a great deal may be used to advantage. The skin should be well powdered before allowing the patient to venture out and the directions for home treatment given carefully, being as follows:

Warm baths must be taken daily and the diet made as

simple as possible with absolutely no rich pastries or indigestible food. The bowels must be kept in good condition, and to assist in this process it is well to drink the juice of a lemon in warm water each morning and one-half hour before the other two meals to take a cup of hot water. Each night the face may be washed with the paste soap and warm water and the whitening creme rubbed on, paying especial attention to the pigmented spots. In the morning after washing with cold water the bleaching lotion should be applied, diluting it if necessary until the skin becomes accustomed to it. The face should be protected with powder before venturing into the air.

The results of this treatment are generally to be seen by the end of the first week, but if the spots at the expiration of the tenth day do not appear much lighter they may be treated by the use of the galvanic current with very good results. The positive pole may be used for application to the face; the proper electrode being a small sized disc covered with absorption cotton and saturated with the lotion. The negative pole may be used in the same manner, using a solution of salt and water instead of the bleaching lotion. The poles may be placed upon the face as illustrated in Figure 13, holding the positive electrode over each pigmented spot for ten or fifteen minutes if possible, and at any rate until the skin is thoroughly reddened. Massage may follow as before.

Treatments should be given at least every second day until the spots have faded. This method has the advantage of being painless as well as efficacious and hence is popular with both patient and masseuse. In using it not more than six cells of the galvanic battery should be employed to commence with, adding others as required, for unless care is

taken the patient may declare that the current makes her a trifle dizzy. Even those most susceptible to the use of the electric current are generally able to bear it if too much is not used at one time, so discretion is necessary.

CHAPTER X.

OILY, STIPPLED, AND SALLOW SKINS.

One of the most disagreeable and trying afflictions is the condition commonly described as an "oily skin." The greased and shining appearance is so marked that nothing can conceal it. Drops of oil stand out in place of the ordinary perspiration and the victim is frequently so mortified that she dreads appearing in society, as the slightest exertion causes this sebaceous secretion to be poured out like an oily coating on the face and scalp and in some instances upon the entire body.

The ducts of the sebaceous follicles are generally plugged with comedones and the surface of the skin frequently appears pallid and poorly nourished. The treatment should be directed not only to the care of the face and scalp but also to the proper care of the entire body, and the diet as well as daily bath must be made matters of much importance.

The lettuce cream may be applied most liberally before using this massage treatment in these instances, as the unguent possesses great cleansing qualities. When, after a few moments it is rubbed off, the amount of dirt that is found on the towel will be found to be surprisingly great, for the oily skin will naturally attract much soot and dust from the air. In some instances it is even advisable to repeat the application and thus cleanse the skin as thoroughly as possible before using the massage. In any event the solution of borax may be used in just twice the proportion and hence to every bag of water, one cup of this mixture may be added as the alkaline mixture possesses the same cleansing quali-

ties exhibited by a mild soap. The water may be applied as warm as possible and if the face is extremely oily the first treatment may be prolonged to some extent.

The skin, being thoroughly cleansed, the acne cream may now be applied, and the finger manipulation brought into play in order to cause this cream to be well absorbed, as it has an astringent action, especially desirable in such instances. The rest of the treatment may be given as described in the chapter on massage and the following instruction given for home treatment. The work has much better results where the treatments may be taken at least two or three times a week, for the first two weeks. After this time once a week will be sufficient. It is especially necessary to restore tone to the skin and for this purpose the manipulation is extremely beneficial.

The diet should be limited to simply nourishing foods and all oily articles resolutely cut out. No sweets or fats or pastries should be eaten, but the fresh vegetables, broiled or roasted meats, and fruits may be eaten in abundance. The warm bath should be taken daily, and if the entire body has this oily appearance it is well to add to the bath one cup of soda and one of salt, allowing the entire body to be immersed in the water for some few moments and then using the shower with clear water.

Treatment of the face will consist in washing it with warm water and a mild soap each night, the paste soap being particularly fine in such instances. Then acne cream may be rubbed in well until every particle has been absorbed. In the morning cold water with no soap should be used on the face and the lotion applied immediately afterward.

The results of this treatment generally become manifested in a very short time and improvement will not only

become more marked each day but a cure will result if sufficient patience is exercised. Of course, where this tendency exists it is always well to watch the diet carefully and in all cases bathing daily will naturally be a part of the life.

Stippled skins, looking as though the faces had been used for pin-cushions, are generally found in people who are troubled with this appearance of oil. In some instances the large pores have been caused from improper treatment of blackheads and pimples, and in all cases the daily bathing and routine just recommended for the oily skin will be extremely beneficial. A simple experiment said to have a great effect upon refining the complexion may be made by applying a mask of absorbent cotton each night, first dipping it in distilled water. The mask is easily made by simply taking one layer and cutting out places for the eyes and nose and mouth, then binding with tape and using as described. The use of the creme and lotion will generally be found all that is necessary, but the mask may be a valuable aid.

SALLOW AND MUDDY SKINS.

Why people in perfect health should have complexions that resemble russet leather is one of the puzzling problems that all of us meet occasionally. Yet, there is rarely a day that one cannot see a woman who might make a fine appearance were it not for the sallow hues that make almost any color absolutely impossible. Cases of this kind may be wonderfully benefited by systematic work, but to be effective it must be impressed upon the mind of the patient that as the skin seems to have this tendency naturally, the daily effort will therefore need to be systematic and persistent if the skin is to be kept in a good condition.

Complexions of this kind do not need a skin food. It is not powerful enough to bleach the skin and will therefore be superfluous, unless there are lines to rub out, in which instance, of course, it may be used in connection with the whitening and bleaching creme. The masseuse generally has a difficult customer to meet in the person of the woman with a complexion that has been obdurate to treatment. Discouraged and disheartened by past failures she demands a positive improvement immediately, or she will not attempt the work. The first treatment is therefore a matter of much importance both to the masseuse and to the patient.

If the skin appears not only sallow but muddy and even at a hasty glance as though it needed a good washing, instead of using the lettuce cream as a preliminary to the treatment it is well to wash the face thoroughly with soap and water and then rinse it off with water to which a little borax has been added. Then the undiluted peroxide of hydrogen may be applied with a bit of cotton, not forgetting to care for the face as well as the neck, and then when the skin is dry the lettuce cream may be applied as usual and the massage treatment given. After the warm water has been exhausted and the flesh has been rubbed dry, another application of the peroxide may be made, and then the treatment continued. The manipulation of the face with the fingers will in this instance be done after applying the Marinello cream, not the skin food.

As the sallow and muddy appearance is often caused by exposure to the air, it is well to advise a protecting coat of powder before going out. This precaution will frequently keep the skin from acquiring the unbecoming color in the spring and fall.

The home treatment will, of course, be recommended as consisting of the daily bath, plain food, and in many in-

stances a good course in physical culture is especially beneficial. The whitening cream may be used each night after cleansing the skin thoroughly with soap and water and the bleaching lotion should be applied in the morning and again at noon if the face is in bad condition. If the skin seems to need a thorough bleaching it may be done without injuring the cuticle by simply applying the lotion twice a day and omitting the creme at night for a time. When the face begins to get rough again omit the lotion and resume the creme for a day or two. Continue this until the skin is sufficiently whitened. More rapid bleaching results may be obtained by applying the lotion by means of the battery.

In connection with the subject of bleaching it is well to explain that it is unnecessary to remove the cuticle in this process. Quite as good work can be done by systematic use of the massage and lotion and creme, and the results will be far better, for all those who have undergone the process of having the cuticle removed must also use most exquisite care of the skin for months afterward, as otherwise it will tan and peel and become utterly unmanageable. The process itself is not so complicated that it cannot be easily done, but the results are unsatisfactory and not to be commended. The skin of the face and neck may not only be bleached light enough to satisfy any one, but may even be made whiter than the skin of the body by using the materials recommended and being careful to protect with powder when going into the air. By applying a creme whenever the face gets at all rough and by discontinuing the lotion there will be no trouble with an irritated surface, no weeks of seclusion and months of care spent in protecting a sensitive skin, but instead a clear, fresh complexion in a healthy condition.

The coarse pores and rough appearance frequently found

with muddy complexions will in nearly every instance yield speedily to the methods described, thus making the appearance far more refined, for no woman can appear to good advantage if the complexion does not bear inspection.

CHAPTER XI.

SCALY, DRY AND FLABBY SKINS.

Fortunately for the majority of womankind, there are comparatively few who are troubled with abnormally dry or rough skins. In a few instances this trouble has appeared in every member of a family, and from infancy, upon any exposure to the air, the skin would immediately look as though some strong irritant had been applied. Tiny scales would flake off in great profusion and the skin appear tight and drawn, with hundreds of tiny lines covering the surface as though acting the part of forerunners for wrinkles. A number of people have acquired this tendency after a severe nervous strain or upon recovering from an illness.

The face frequently burns and smarts and when washed becomes red and inflamed, any application of soap making the condition much worse. No powder can be applied to protect the face, and even the slightest exposure always means an increased amount of trouble; the cases seem hopeless indeed.

The use of the automatic massage is in many instances absolutely impossible, while in others it may in time so harden the skin that the trouble becomes much less than before.

When the skin is abnormally sensitive the following method will be found extremely beneficial. The face and neck may be coated well with lettuce cream, and then warm cloths applied, using them as warm as can be borne with comfort. This process may be continued until the flesh becomes uniformly pink, when the superfluous creme may be

removed by drawing the softest of towels gently over the surface. Then an application of tissue food can be used and the regular finger massage may be given.

Occasionally one finds a case in which the use of water at any time is actually impossible, as it produces a roughness immediately. In every instance such as this an oil must be used for cleansing the skin, instead of soap and water, and to get the best results it should be used as warm as possible.

This mixture has been found to be extremely beneficial: Six ounces of the finest almond oil, one ounce of spermaceti, one-half ounce of lanolin, and two ounces of witch hazel. It may be heated by immersing the wide-mouthed bottle in which it is kept in warm water until the mixture becomes liquid enough to spread well on cotton. Then apply and remove in a few moments in the usual manner. The massage should follow, and the skin be rubbed thoroughly with the tissue food, following directions given for finger massage. In order to protect the skin from the action of the air it should be well powdered before any exposure.

Complexions of this description need constant care to keep them in good condition, and women who are so afflicted should make up their minds to submit cheerfully to the inevitable in the shape of constant and frequent applications of oils and skin foods in order to keep the skin smooth. The fact that other people use an application of this kind once a day or once in two days should be no guide to the work, for every woman must study her own needs and fulfill them according to the peculiarities of her complexion, regardless of what other people advise.

FLABBY AND WITHERED SKINS.

On many occasions young women have presented them-

selves for treatment with skins that looked as though they belonged to women of seventy. In nearly every instance the beginning of the trouble could be traced to some severe illness or protracted strain or nervous occupation. Returning health seemingly does not affect the appearance of the skin in such instances, and hence much work is necessary, especially in the line of tonic treatments.

The electric current is most valuable and may be used after the water massage has thoroughly cleansed the skin. The Faradic current is best for the first work, and should be used by applying the electrode with the cotton dipped in a mixture of salt water and alcohol directly to the face. The negative pole should be used and the treatment prolonged until the skin glows from the friction. Then the massage may be given by the use of the vibratile for a few moments, followed by gentle finger massage. In extremely obstinate cases cold salt sponge baths must be insisted upon for home treatment. The diet should be of most nourishing foods with plenty of bean, eggs and strong stock soups. The water massage given with cold water to which alum has been added should be used every night, massaging the skin afterward with the whitening creme. After four treatments with the Faradic current, which should be taken at least twice a week, the galvanic current may be used by saturating the cotton in the lotion and applying it as the positive electrode to the face until the skin begins to appear pink. This should be continued until a uniform rosiness is seen and then the finger massage given as before. At least one or two months' patient work will be necessary before improvement can be expected. By the end of that time the effects will be so good that no one can doubt the efficacy of the treatments, and from that time on, improvement will be steady and sure.

The use of the galvanic current may be alternated with that of the Faradic if the patient desires, or it may be continued to the close of the period. Although this treatment is mentioned particularly for younger people, it also does great things for those who are older and as a consequence many of the elderly women who have pride in their appearance take these treatments regularly, as the effect is so beneficial.

CHAPTER XII.

FRECKLES, TAN AND SUNBURN.

The freckled maiden may have Titian hair and brilliant coloring and dewy eyes with long black lashes, but if her complexion is as spotted as the guinea hen's her beauty is marred indeed. The pigment spots, as in the case of moth patches, are situated in the deeper layers of the skin, and are almost invariably made more pronounced by exposure to the sun and air.

As a rule, those afflicted with freckles have unusually fine skins, and when free from these discolorations the complexions generally far outshine the ordinary type. In almost every case most wonderful improvement may be made by adopting the best method of caring for the skin, and clinging to it until the freckles have vanished. The most difficult part to learn is that of constantly protecting the skin from the influence of the sun and air, as even two or three hours' exposure without the proper protection will almost invariably result in a fresh crop of brown spots. In some instances the effect of the heat and light, even when kept away by thicknesses of cloth, is sufficient to freckle the arms and neck.

The treatment of these cases, whether the freckles are light or dark, is almost invariably the same and is best performed in the following manner: After thoroughly cleansing the skin with the water massage a mask may be cut out of a layer of absorbent cotton and thoroughly soaked in a solution made by mixing equal parts of peroxide of hydrogen and lemon juice. If the skin is extremely sensitive and commences to burn immediately and looks blotched the mask

should be removed instantly and the water again used. Then the massage may be given, using the tissue food if the face is extremely tender and the whitening creme if it is not. The treatment is finished by powdering the face well. If the progress seems too slow after the first few treatments the use of the galvanic current with the positive electrode saturated in the bleaching lotion may be employed, using the current for fifteen minutes each time.

Work at home consists in using a mild soap each night with warm water, and then massaging well with whitening creme before retiring. In the morning nothing but cold water should be used and no soaps should be employed at this time. Immediately after drying the skin, the bleaching lotion may be employed by using a small sponge and thoroughly saturating it before applying. If the lotion is too severe it may be diluted as required by pouring out a small quantity and adding the same amount of water to it. The friction at night by means of massage with the finger tips is most important and should not be discontinued until the freckles have entirely disappeared. Even then the whitening creme should at least be employed alternately with a skin food, using one or the other each night, and always applying a good powder before exposure to the air.

The most obstinate cases of freckles can always be made much lighter by this process while ordinary varieties may be cured in a very short time. Of course, severe or dark freckles require much more work and it is because of them that so many women insist upon undergoing the "peeling process" each year. It is not necessary to remove the cuticle, as so many declare, though to thoroughly bleach the skin may, of course, irritate it to some extent. Those who wish to attempt it may use the articles advised and the galvanic treatment as well, discontinuing the use of the lo-

tion when the face becomes decidedly red. No freckles can be kept in subjection without work. Those who have them must remember that this tendency is inborn and must be watched and guarded against the same as other blemishes of this kind. In some instances, as people grow older, this inclination or tendency seems less marked, and frequently the skin becomes free from the spots, from no particular reason. The majority of sufferers, however, need to use constant care to prevent acquiring more freckles as well as to aid in getting rid of the old ones. In all of this work the habit of protecting the skin is the most important and care should be taken to avoid washing the face either just before or just after exposure to the air. The best manner to use a powder is to apply it after a skin food has been rubbed in well, and in order to make it effective care must be taken to see that the powder is one that will cling to the skin well. No ambitious woman will be deterred from this work by the fact that she must be constant in her attentions, for she knows all good results require much and untiring application.

TAN.

The bronze coloring has been so popular for the past few years that some of the faddists have spent much time in acquiring a coating, that cost many dollars to remove. The desire to look weather-worn can usually be easily accomplished, for few people need more encouragement than an occasional outing on the river or driving through the country with no protection to the skin in the way of head covering or even a coat of powder. Once obtained it is extremely difficult to remove, and very frequently a thorough bleaching must be undergone before the brown shades vanish sufficiently to make the face presentable if light colors are to be worn.

That there is no necessity for acquiring this coloring may be seen by the scores of enthusiasts who spend much time on the golf links or boating with none of the added tints so undesirable in the majority of cases. The care of the skin necessary in preventing such complications is practically the same as in freckles, and creams and powders must be used liberally as directed if the skin is to be kept free from defects. It is well to avoid the use of much water on the skin when out in the air a great deal, using a cleansing creme of some kind instead of water. The whitening creme should be used religiously each night and the Creme Celeste may be employed as a sort of skin food before using the powder, or the tissue food may be used for that purpose. If one is desirous of trying a few of the home-made concoctions, the strawberry paste and cream may be applied for the purpose of removing the tan. The recipes appear in the chapter on the making of creams, and are extremely effective when carefully prepared.

SUNBURN.

Sunburn is generally dreaded by those who suffer from it, not only because it is particularly unbecoming, but also on account of the actual discomfort and pain suffered by those unfortunate enough to be afflicted. In reality, there are few things easier to avoid than this very trouble, as hundreds of people who have become enlightened can cheerfully testify. The same general rules applying to the protection of the face in preventing tan and freckles also apply here. Where there is evinced a decided tendency to burn on the slightest exposure, it is best to use no water upon the face for days at a time, instead using the cleansing creme during the day and the tissue food or Creme Celeste at night. If much time is spent upon the water, the care

should be redoubled, as it seems particularly difficult to avoid burning when subjected to the strong glare of the sun, and the reflection back from the water.

If one has been unfortunate enough to incur a severe burn the treatment is simple, and consists of applying the most soothing ointments until the skin is again in a normal condition. A very pleasing mixture, called the Traveler's Comfort, may be made by adding to six ounces of almond oil one of lanoline, two of spermaceti, one of white wax and one drachm of Balsam of Peru. Perfume as desired and use each night for massaging the skin and before applying powder. If it is impossible to obtain any of the articles mentioned, it may be remembered that any good cold cream or pure oil may be used. If almond oil is not to be secured, olive oil may be applied, and if in an emergency the powder has been lost or mislaid the best substitute is found in pure household cornstarch. This simple remedy dusted on inflamed surfaces proves to be very soothing and will greatly assist in the work of reducing the inflammation. The warm oil mixture under the treatment of scaly skins may also be used for cleansing the face during the day, though the other articles are usually amply sufficient for any case. Properly managed, the most sensitive skin may be kept from burning, no matter how great the exposure may be. The exceptions to this statement are found only where, either from indolence or ignorance, sufficient care has not been taken to insure a thorough protection from the sun.

CHAPTER XIII.

THE USE OF POWDER.

For some mysterious reason women who are otherwise well informed have exhibited a most unreasonable prejudice against the use of powder. They gaze upon the innocent puff with horror and flee from the attractively labeled box containing this cosmetic as though it were also marked "dangerous." When some of these fastidious souls are questioned as to a good substitute, the answer is almost invariably the same and one hears talcum recommended vigorously. A distinction without a difference and one that makes the average woman chuckle, for she has tried the same thing and knows that talcum as a protection is useless.

If the antiquity of the custom could make it more commendable nothing more would be needed, for the ancient volumes are filled with references to the use of cosmetics, and specially to those used for the purpose of concealing imperfections of the skin. In fact, Job's third daughter was named Keren-Happuch, meaning horn of paint (Job. 42: 14), indicating rather plainly that there must have been some degree of favor shown this particular cosmetic in one household.

Returning to more modern times, it is refreshing to learn that nearly all men have been wise enough to realize how necessary the use of powder is as a protection to the skin, and as a consequence the barbers insist upon powdering the faces of their customers immediately after shaving them, thus avoiding the danger of irritation from the sun or air. For the purpose of protection the powder must be of a variety that will adhere well and smoothly, otherwise

the face will appear scaly and rough and give the impression of being coated with the material used.

A pure vegetable powder is thus in great demand, for, in addition to the office of protection, the fastidious woman insists that it shall possess the very desirable quality of harmlessness, and this is not possible when any of the well-known heavy, white mineral substances are employed. Rice flour, though much quoted, is rarely used, as it is difficult to procure, and hence either one of the many starches made from corn, wheat or beans is usually employed as a basis for a mixture of this kind. The ideal powder cannot be made by the amateur or the ordinary manufacturer, as the process is so complicated that it requires a most elaborate outfit to produce the cosmetic properly, as in the many different siftings not only many varieties of bolting cloth and the employment of people who understand the work, but also the presence of a competent chemist as well. Of course, there are many formulæ extolled, but the one in greatest favor demands the use of the finest and purest almond powder, orris powder, wheat starch and rice starch, sifted through bolting cloth several times, then tinted and perfumed and blended with a most delicate oil into a mixture not only soft and fine, but also possessing the quality of sticking on the skin as well. The sifting process is what really makes the powder—making a work much beyond the reach of the ambitious amateur owing to the expense of the different grades of bolting cloth required, varying from the ordinary mesh to the very finest. It is said that the best powder is sifted at least seven times. The tinting, too, is a matter of some consequence, and as there is never a skin that is positively white, the well-made powder should as closely as possible simulate the colors observed. The application of a pure, white powder to the ordinary skin

makes it look as though it were coated with something like whitewash, the dark-colored portions showing through in a bluish shade, presenting a most unnatural appearance. The color most popular for use on all skin is that termed "flesh" and is made by adding traces of carmine, or carmine and ochre to the white materials until a peculiar chamois tint is produced.

Powder should always be applied before venturing into the air, and especially when about to embark upon a boating, driving or any other expedition. The most practical manner of applying it is to first rub on some skin food and after a few moments remove all the oil that may be found upon the skin, then dust on the powder with a soft bit of cotton cloth, and remove all that does not cling well by rubbing a dry cloth over the face. In this manner the roughness, burning and irritation generally following upon exposure to the sun may be avoided and the skin kept smooth and fresh. Coats of tan are much more easily acquired than lost, and the girl who values her appearance will endeavor to preserve the most precious of possessions—a good complexion—while protecting a poor one from further defects.

A pleasing and fragrant mixture that may be used after the bath for the purpose of preventing the disagreeable odor from perspiration from being noticed is made by mixing these ingredients together:

POWDER FOR USE AFTER BATHING.

Powdered orris root	4	ounce
Boracic acid (powdered).....	1	
Sub-nitrate bismuth	1	
Corn starch	4	

Those who are anxious to try mixing powder that, though not purely vegetable, is still uninjurious, may try

the following recipe, said to have belonged to a collection made by the famous Catherine De Medici, who was almost as much envied for her knowledge of the cosmetic art as she was hated for her attempts to rid the world of those she disliked :

Best Venetian talc.....	4	$\frac{3}{4}$
Sulphate barium	5	$\frac{3}{4}$
Corn starch	4	$\frac{3}{4}$
Rice flour	2	$\frac{3}{4}$

Sift all together through a coarse sieve, several times, so that the lumps in the barium sulphate may be broken up. Then add one-half ounce of lanolin and one ounce of almond oil and sift again. Add to these ingredients sufficient carmine and ochre to make the tint a soft tan and sift through three grades of bolting cloth before adding the perfume, which may be either oil of rose, nerolli or any other odor desired. The next four siftings will be necessary in order to make the powder fine enough to use on the face.

A powder for which there is much demand is that made by mixing one of these strongly white ingredients with water and thus making a so-called "liquid powder." Although useful for the neck and arms when unsightly blotches or redness prevent making a good appearance, the application upon the face should be made most sparingly lest the skin be made dry and scaly.

LIQUID COSMETIC.

Oxide of zinc	I	$\frac{1}{2}$
Barium sulphate	I	$\frac{1}{2}$
Glycerine	I	$\frac{1}{2}$
Alcohol	I	$\frac{1}{2}$
Water	6	$\frac{1}{2}$
Cologne	$\frac{1}{2}$	$\frac{1}{2}$

Mix thoroughly and strain through cotton or fine bolting cloth. Keep in a tightly corked bottle and apply with a sponge when required.

Equal in importance to the proper application of the powder is the manner of removing it, and if the skin is to be kept in a thoroughly fine condition the powder must positively be removed by a thorough cleansing each night. The most harmless substances may cause a great deal of trouble unless this precaution is observed. When traveling, a cleansing creme will remove the dust and the powder quite as effectively as soap and water. On other occasions the ordinary means may be employed. The respect with which this cosmetic is held by some people may well be estimated by the very general use it enjoys, for it is said of the modern maid that—

She may live without love, never owning a heart,
She may live without music, and drama and art;
She may live without having a sin to confess,
With a calm disregard for new hats or a dress;
She may live without rarebit or lobster or chowder,
But where is the maid who can live without powder?

CHAPTER XIV.

THE ART OF BATHING.

To the ordinary mortal the bath is a matter of routine, to be taken at regular intervals for the purpose of cleansing the body. That it may have far-reaching results in the way of relieving certain conditions or of remedying grave defects of the skin, many are unwilling to believe. However, it is not necessary to convert, for just a little insistence in the way of prescribing the bath will soon bear speedy results.

The educated bather, and by that is meant the woman who understands just what benefits may be derived from the proper use of the bath, has her daily plunge into lukewarm water, followed by the cold sponge. In addition to this there is the warm bath, taken at least twice a week, at a temperature sufficiently high to induce a vigorous perspiration. If possible, one of these baths should be either a Russian or Turkish bath, followed by massage given by an experienced operator. The results of this system of bathing may be seen in the clear skin and youthful appearance of the devotee to cleanliness. Her figure, too, bears testimony to the fact that rarely does superfluous flesh persist when the pores are kept free from obstructions and the body maintained in an absolutely active condition.

Of course, there are numerous methods of taking baths and many improvements on the plain bath, all of which will be considered in order of importance. The first consideration is naturally the kind of water that must be used for the purpose. If this is extremely hard, making the skin feel peculiarly sensitive and irritated afterward, it will be

well to make use of the following formulæ, mixing the ingredients and keeping a large supply on hand constantly, so that the effort may be systematically conducted: Borax, one pound; aromatic spirits of ammonia, one pound; soda, one pound. Mix together and keep in a mason fruit jar, using one cup of the mixture for the ordinary tub bath. Then in lieu of a washcloth nothing can be better, both for the effect on the skin and for the pleasure of using it, than the bran mitten. This is made by cutting out a piece of cheesecloth into a six-inch square. These squares may then be stitched together, leaving only a small opening at one end in which to put the bran. When filled comfortably—that is, just enough to make the mitten about three-quarters of an inch in thickness—the opening may be closed and the mitten is ready for use. The benefit from the bran is supposed to come from the gluten in it, which strengthens and softens the tissues. The warm water, of course, assists in this process. In a bath of this kind no soap is necessary to assist in the cleaning process, as the bran is sufficient. If the skin is at all sensitive after leaving the bath, showing a tendency to peel and flake off, nothing can be better to use for anointing the entire body than the following preparation, made easily by observing the directions:

Gum tragacanth	1	ounce
Borax	1	ounce
Glycerine	2	ounces
Alcohol	2	ounces
Water enough to make a thick jelly.		
Powdered orris root	2	ounces

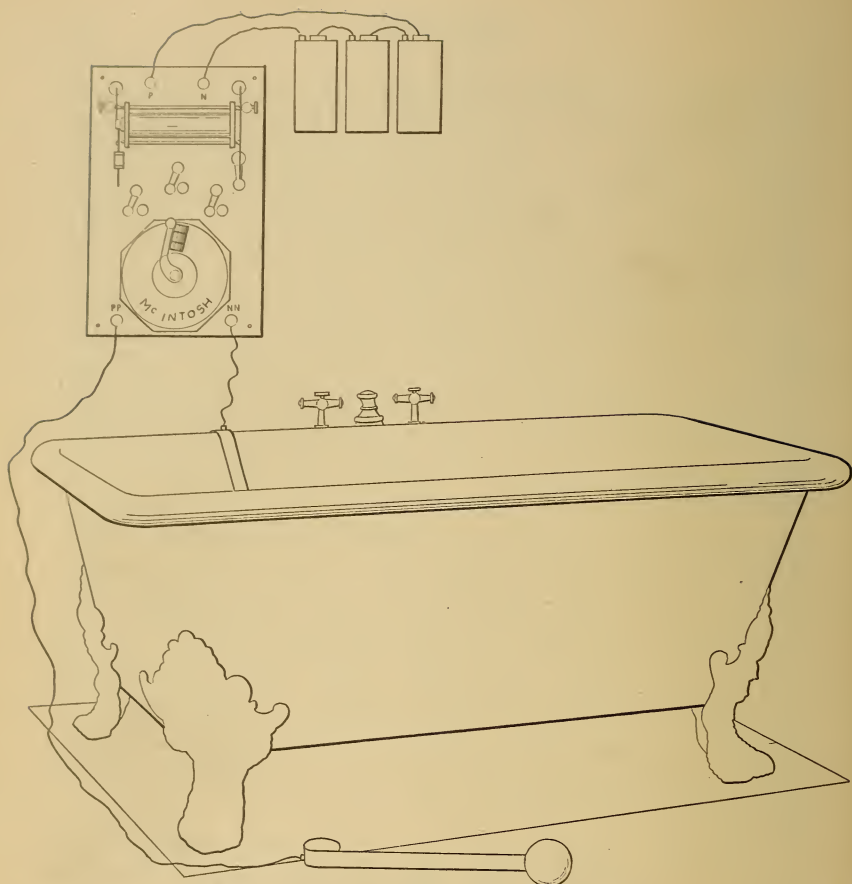
Dissolve the gum tragacanth in enough water to make it thoroughly transparent and then add the glycerine and alcohol. More water may then be added as necessary, using the orris powder last of all. This mixture is generally

named jelly of violets and has the advantage of drying in almost immediately, thus obviating all danger of producing a sticky feeling. In addition to the use of this jelly, after bathing it is often necessary to anoint the body with a good creme before entering the bath. In this case Creme Celeste will be found extremely beneficial.

People troubled with eruptive diseases of the skin or obstinate comedones are much benefited by the sulphur baths. When it is impossible to take baths of this kind excepting at home, the method may be made extremely easy by purchasing a bottle of the liquid sulphur. There is said to be enough in one of these bottles for eight baths. The best way to use this substance is to pour the amount required into the water that is about body-temperature, and then after entering the bath, have a sheet drawn over the tub and up closely around the neck of the bather. The warm water may then be added until the bath is as hot as can be taken with any comfort. This will usually induce a copious perspiration. Before entering a sulphur bath, the face and neck should be carefully washed with clear, warm water, and after leaving the bath the same precaution should be observed.

Nervous temperaments are wonderfully benefited by means of the electric bath, and so great is said to be the curative effects of these baths that in many instances most stubborn cases have been improved rapidly by the proper amount of bathing. This fact should be of especial interest to the many who are afflicted with the brown discoloration termed "moth patch," for it is said that many of these most obstinate and disfiguring spots may be much assisted by this process.

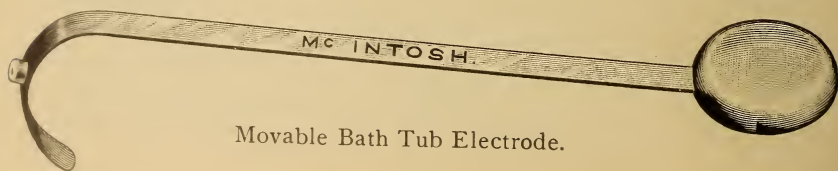
When the effect of friction is desired from the use of bran baths, this may be obtained by adding a peck of the



A Convenient Faradic Bath Apparatus.

Diagram showing Bath Tub with Movable Electrodes connected to Switch Board.
A maximum of convenience and efficiency at a minimum of expense.

It may be used in any bath room in connection with any porcelain or porcelain lined iron tub, the movable bath tub electrodes being placed in any desired position on opposite sides or ends of the tub, thus permitting application of the current to any portion of the body of the patient.



Movable Bath Tub Electrode.

ordinary bran to the warm bath, and rubbing the body vigorously with the hands. Some people prefer to use oat meal in the bath, claiming that the effect is even better, while still others assert that common rock salt added to the water in large quantities and then used to produce a decided glow is the best of all. Of course, the difference in action between salt and a substance containing gluten is too great to admit of any comparison. Hence those who prefer salt baths may use them for the purpose of stimulation, but not with the idea of softening the skin.

The temperature at which the water should be used may be regulated according to the effect desired. In baths near the body temperature the perspiration ceases, no sweat is secreted, but instead the fluid generally excreted is retained in the skin. Warm baths have a relaxing effect. They dilate the blood-vessels and cause an abundant excretion of fluid. Cold baths harden the skin and have much influence in accustoming one to low temperature, but do not cleanse the skin to any extent, while in addition they produce a shock not either agreeable or safe for those of weakened constitutions. A safe rule to adopt in order to avoid the danger of catching cold, or of becoming at all weakened by warm baths, is that of using a cold sponge immediately afterward, thus uniting the methods in a way that is sure to be beneficial.

In connection with bathing, the use of the best soap is a matter of much importance. And, strange as it may seem, not one person in a hundred seems to realize what a good soap really is. The majority of people long for soaps producing great quantities of lather. Others insist upon finely perfumed articles and pay exorbitant prices for daintily scented packages. Wise people either cling to the mild and pure imported castile or use a paste soap that is nearly neutral in reaction.

The harm done by some of these strongly alkaline soaps can hardly be overestimated. They not only induce a prematurely aged appearance of the skin by extracting the fat from sebaceous glands and tissues, but also produce more or less deep cauterizations. Dry or scaly skins are especially injured by the use of such soaps, while people inclined to wrinkle easily may, upon observation, notice that each application of a soap of this description is followed by the appearance of numerous small lines that indicate the coming of the deeper creases.

The best of all soaps is the one that can cleanse without injury. It should be nearly neutral in reaction, produce but a little lather, and leave the flesh feeling soft and smooth instead of dry and drawn. When the ordinary castile does not suffice, paste soap should be used by rubbing it up with warm water into a soft lather. No soap should be used oftener than once a day, and many skins will not tolerate the use of the mildest of preparations, even as often as this, so in the use of this cleansing agent as in other things, discretion will be found a very good aid.

CHAPTER XV.

THE SUBJECT OF STERILIZING INSTRUMENTS.

The masseuse who would do good work must not only understand how to manipulate the muscles, open and cleanse pustules and coax the signs of age away, but she must also learn and practice how to thoroughly sterilize her instruments for this work.

The necessity for this knowledge is so great that it is strange in this age of universal information to find so many who neither seem to know nor care anything about this extremely important subject. Not only must the instruments themselves be thoroughly cleansed, but the hands of the masseuse must also be taken into account and rendered as harmless as possible. Soap and water alone are not sufficiently powerful to really clean any hand, and especially to make the finger-nails properly free from germs. In every instance there must be used, not only these ordinary agents, but also something stronger, such as either the 1-2000 per cent of mercuric chloride, as advocated in many hospitals, or the three per cent formalin solution used effectively and very generally for skin work.

The cleansing or sterilizing of instruments may be accomplished by two methods, either by boiling for a few moments in water to which one per cent of soda has been added, or by immersing in a ten per cent solution of formalin. It is a well-known fact that heat destroys nearly all germs very effectively, while chemicals are more or less limited in their action, though, of course, effective in many cases. The careful masseuse should be provided with a ten per cent solution of formalin and water, and after

using an instrument should cleanse it with water and alcohol, and then allow it to remain in this solution for a few moments; for instance, there should be a little flat enameled dish used for this purpose, and into this the formalin solution may be poured, using a fresh supply, of course, for each patient, and always afterward rinsing the instrument off with clear hot water. If the boiling process of sterilization is used, the instrument may be cleansed first and then subjected to the action of the boiling water for, say, four or five minutes. This does not mean water from a tap that is extremely warm, but really boiling water, such as may be obtained by placing the tiny dish over a flame and allowing the water to boil vigorously. This process of sterilization must extend to everything used, the tiny cup of the automatic massage, the cures, and the mallets and rollers used for massage. These last-named articles may perhaps better be immersed in the formalin solution, as the boiling water is not the thing for hard rubber or ivory, while the steel instruments may be subjected to the boiling.

The hands of the operator should be carefully cleansed before she touches the face of the patient, and this is to be done by scrubbing well with soap and water and then rinsing in either the bichloride or formalin solution. The skin is always covered with a multitude of germs, some of them entirely harmless; others, undoubtedly, germs of disease; any of them well calculated to make much mischief at the first provocation, or when they can gain an entrance into the skin, as through an incision. Hence before opening any pustules or removing blackheads the skin should be washed with an antiseptic solution of formalin. In order to prevent irritation this solution may be made by using distilled water and adding a little glycerine, thus: Distilled water, 48 ounces; glycerine, $\frac{1}{2}$ ounce; and formalin, $1\frac{1}{2}$

ounces. This solution may be poured on to the bit of cotton, and then used for washing and cleansing the face. Then the pimples may be opened with the instruments previously sterilized, and the peroxide of hydrogen used to destroy the elements upon which the germs multiply, though of course this liquid may be of some use in destroying germs as well. The acne cream, to be used for massage, is an ointment containing an antiseptic which may by absorption tend to destroy the germs contained in the pustules, and thus prevent recurrences; hence the necessity for deep massage after the contents of these spots have been removed.

In using any creme, it is well to take the precaution of using from a small amount, rather than from large portions that may be made a breeding-place for the multiplication of germs by the careless masseuse who places her fingers from the face to the jar, and back again, times innumerable. The ordinary skin food is rarely possessed of any germicidal power and may thus be made a medium of much danger.

Hence care should be taken to see that the cremes are used from small jars, and renewed daily, or oftener if necessary, to invariably use bits of absorbent cotton for removing the creme and applying to the face, and if it has been impossible to get enough the first time, to employ a fresh bit of cotton each time the creme is applied to the skin. In applying powder this same precaution should be observed, and the powder should be sifted on to the fresh bit of cotton used for each patient, instead of dipping the cotton into the box.

Instruments should be wrapped in cotton to protect the points and edges and kept away out of sight, not lying where dust and floating impurities in the air may cover

them, but in some good case or drawer, where they will be free from more than the ordinary amount of dust. The cotton used should be kept in a metallic receptacle or drawer and not exposed to the air and dust, and the supply of towels or articles used should always be kept out of sight as much as possible, so that the paraphernalia may be kept fresh and attractive.

So with the solution and jars used, the labels and outward appearance must be attractive. There is no excuse for carelessness in this respect. The appearance of any room for the purpose of skin treatment should be as scrupulously neat and attractive as possible. Every patient has a right to demand that all possible effort be made to keep the articles used upon her face and hands absolutely free from any danger of infecting her. The competent masseuse will need no urging to devote the time necessary to this work.

Those who read these lines feeling that such precautions are unnecessary will do well to remember that each year is raising the standard; and requirements for these responsible positions are consequently becoming more rigid. Operators who get the best results will naturally be the most popular, and will obtain equally pleasing returns financially.

The skillful operator occupies a prominent place in the lives of women, for she means to them a powerful aid in preserving their complexions, increasing their period of enjoyment in proportion to the youthful appearance they are able to present. Many women are really young as long as they appear to be, and they dread the encroachments of age not so much because of the fear of losing their beauty, but more on account of the dread of the loss of affection and attention they think will follow as their ability to attract and please decreases.

It is especially with the hope of impressing upon all

women in this business the necessity for absolute honesty that these lines have been written. The more generally full knowledge on this subject is disseminated, the better for investigators, for then there will be fewer despondent and discouraged souls in this world, and more who are happy and contented.

"Let your light so shine that others may see your good work."

CHAPTER XVI.

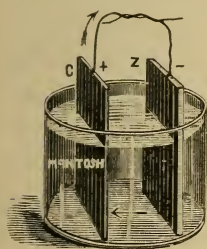
THE USE OF ELECTRICITY.

The importance of the use of electricity in facial work can hardly be overestimated. This wonderful force can be utilized in so many ways for conditions so dissimilar that many people have been deterred from attempting to use it at all, feeling that the course of study necessary would be far beyond their means. Books of instruction possessed no attraction for those who would learn at home, as the terms used to describe the various peculiarities have been too complicated for the ordinary students.

In describing the use of electricity as of service to the worker who wishes to benefit her fellow being by removing disfiguring moles, hairy growths or bleach the skin by means of cataphoresis, care has been taken to use only the simplest expressions and to explain as clearly as possible the most practical method of obtaining the desired effect. The use of the electric current should be understood by every one who attempts to do good work in massage or scalp treatment, for by it results of the most pleasing nature are obtained.

In view of the many misapprehensions regarding this universal remedy, it may be well to explain by means of an experiment familiar to all how easily this current can be produced. When a person walks rapidly over a woolen carpet or shuffles the feet quickly over any substance of this kind, and then touches a dry, stationary object or the dry skin of another person, a spark results, passing between the two points of contact. The friction upon the carpet charges the body with one kind of electricity, while the stationary object is charged with the opposite kind,

This current may also be produced in other manners, and as it is necessary to have it furnished continuously, as well as to provide means to convey it from this point in a uniform way by a proper medium, experiment has resulted in the invention of batteries. In these the current is either caused by the immersion of certain metals in fluid or by the contact of certain metals in which the chemical changes resulting from union are powerful enough to create an electrical disturbance that can be utilized for the purpose of treatment, and from whence it may be conveyed by means of the conducting cords. In the experiment mentioned the body from which the electric spark originated would represent the positive pole, while that to which it was directed would be the negative.



The simplest form of galvanic cell consists of two pieces of dissimilar metals, partially immersed in diluted sulphuric acid. The illustration shows a single galvanic cell composed of zinc and carbon plates. When these plates are insulated from each other there is no action between them; but when they be connected by a wire, chemical action at once begins at the surface of the zinc, electricity is generated, which passes across the liquid to the carbon. The zinc is known as the negative element and the carbon as the positive element. The current of electricity passes through the fluid from the zinc to the carbon and from the carbon passes along the wire back to the zinc, thus completing the circuit. The current generated in the battery cell always takes this direction, hence the current from the carbon pole is always positive and the current from the zinc pole is always negative. If this fact is kept well in mind there

need never be any doubt or fear about using either the positive or the negative, whichever may be desired or indicated as necessary in any particular treatment.

When six cells or twelve cells are used the current is continuous from the zinc of the last cell of the series, whether it be six or twelve, through the fluid to the carbon, and by means of the wire to the zinc of the next cell, and so on through the entire series, finally emerging from the carbon of the first cell through the copper wire back to the zinc of the last cell, six or twelve, as the case may be. Now if the copper wire connecting carbon of cell "one" with the zinc of cell "twelve" be cut and a living body (the patient) be placed in the circuit, the patient then becomes a part of the circuit; if the right hand is holding the wire from the carbon, then the positive current is entering the body through the right hand and the negative current is passing out of the body through the left hand and back through the wire to the battery. Or, as in practice, if the sponge or inert pole is connected with the wire or conducting cord from the carbon and the needle or active pole is connected with the conducting cord from the zinc, then the needle becomes the negative pole and is properly connected for negative electrolysis.

The quantity of current from one cell is as great as the quantity from six or twelve cells; but the penetrating power is increased by each additional cell; and just as we add two or four or six horses to overcome the resistance of mud or hill or heavy weight of load, so we add two or three or six or twelve cells to overcome the resistance of the human body and secure sufficient force or push (electro-motive force—E. M. F.) to force the current through the resistance interposed.

For practical work a good battery is necessary, and

as there are many forms advocated, it may be well to state the points to be considered. In all work of this kind it is not only necessary to secure a continuous current, but also to have it as painless as possible.

In dry cell batteries the current is all that can be desired for a time, but it becomes weaker constantly, thus making it necessary to renew the cells at frequent intervals. While the original cost of the battery may be small, the item of buying cells is one to be considered, as well as the disadvantage of sending for them if away from a large center. The delays occasioned when it is impossible to procure the cells readily often make it most embarrassing for the operator.

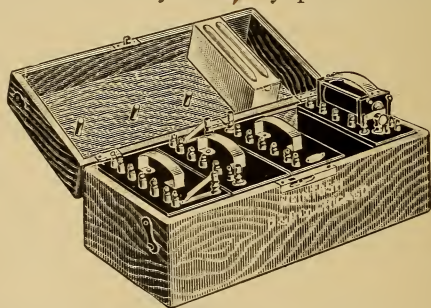
The street current, advocated so enthusiastically, possesses one serious drawback, as the high voltage makes it so much more painful that some patients are unable to endure the sensation, thus making it unfeasible for many kinds of work. Then, too, unless the current is direct it cannot be used under any circumstances, as the alternations would be too frequent.

The wet cell battery would therefore seem the most practical for all purposes. In this form the current is produced by immersing the plates of zinc and carbon into a liquid called a bichromate solution. A small cup accompanying the battery shows just how much each cell requires and the compartments are filled accordingly. The most useful form is that in which both the galvanic and Faradic current may be obtained from the same battery.

The galvanic or constant current is always indicated in the work of destroying the various growths, while the Faradic or interrupted current is advocated for its stimulating effect in massage, scalp treatment or anything in which stimulation is considered necessary.

The author has found that so great is the difference in the capacity of people for enduring the current that a battery of twelve cells is the most practical for everyday use in the treatment of facial defects. In almost all cases at least four cells will be required, while for the removal of superfluous hair the number of cells varies with the size of the hair, and in work on moles and other treatments in which the galvanic current may be indicated, the number of cells necessary may be six, eight, or even ten or eleven. Hence the author has found the twelve-cell combined galvanic and Faradic battery to be not only the most practical, but also the most economical, and as the Faradic current is now so frequently used, it is really securing two batteries in one at an ordinary cost.

In the use of electrolysis many points are to be consid-



McIntosh Galvanic and Faradic Battery.

ered, not only regarding the peculiarities of temperament and sensibility, but also in respect to the work itself. The current that is painless to one may be unendurable to another. Different sections of the same face also vary in this respect, the region about the nose and mouth being particularly susceptible, while the middle of the cheeks and chin are usually operated upon with no difficulty. Another singularity is observed in the manner in which the same current

affects the same person on different days. For instance, in the work of removing moles, six cells may be used easily on Tuesday, and perhaps on Thursday only five can be tolerated. Hence the careful operator will begin every treatment with a weak current to avoid the danger of administering a shock.

One of the most difficult phases encountered is not in the work of removing the blemishes, but in refusing to remove many hairs or to work long on a mole at any one time. The patient frequently is so overjoyed at the prospect of improvement that she obstinately insists upon all necessary work being finished within a few days. The only recourse found is in the use of a firm refusal, not only for the sake of the patient, but also for the operator, as it is absolutely impossible for any one to work long at a time on anything so trying as the removal of superfluous hair and be satisfied with the results. One-half hour is quite sufficient to devote to any case at one time. Of course, there are instances where one, two and even three hours' work has been done, but the hairs have been prominent and widely separated and the operator has possessed unusually steady nerves. Then, too, the danger of producing a serious inflammation must ever be considered, and this injury may easily be avoided by using the current in a conservative manner.

Many questions are asked concerning scars, and of course there are instances cited where the disfiguring white marks were more of a blemish than the hair itself. Care and management will, however, almost invariably prevent any such catastrophe, for although destruction of tissue must result in a scar of some kind, the mark is so minute that only the closest investigation will reveal it when the proper method has been used, and caution in using the needle for any

length of time in the same location has been observed. Then, too, there must be attention to the face immediately after the use of the needle in the way of applying ointments and dusting powder to allay the inflammation.

In one instance where a growth fully as heavy as an ordinary beard was removed, there was manifested a tendency to intense inflammation. The parts festered, and it seemed impossible to proceed. The result, was that so little work could be done at a time that the patient became discouraged and declared she would employ a razor or a depilatory. The experiment was then tried of massaging the face well after each use of the needle, using for the purpose a zinc ointment and dusting on zinc powder afterward. The patient was instructed not to touch the spots excepting in rubbing on ointment, and under no consideration to use soap or water or to remove the tiny crust that invariably forms after the use of the needle. The effect was most happy, for not only was the inflammation banished, but the entire growth was removed without a scar.

The question of the reappearance of hair is rather difficult to answer. Given the ordinary case, the percentage of hairs returning should be less than five per cent. In some instances this is, of course, a small estimate, but in the main it is an average usually observed. Then, too, one can never be certain that the same hairs return. They may be others springing up in the same neighborhood, or they may be hairs that have been broken off and partly dislodged by means of depilatories, plasters or tweezers. Nearly every one who is so afflicted has tried some one of the many methods advertised, before resorting to the electric needle for permanent relief. At any rate, no matter what may be the cause of the return, the remedy is easily used and the effect of work conducted for a sufficiently extended period is to permanently abolish the growth.

In cases where eruptions are complicated with the growth it is well to cure the eruption before attempting to remove the hair, unless there exists a chronic inflammation, such as found in Acne Rosacea, where the nose, chin and parts of the cheeks appear a wine color or bright red nearly all of the time, while all of the tiny blood vessels are greatly distended. In this condition the current may be used with benefit, for it will not only remove the hair, but will also reduce the existing inflammation.

The work of removing superfluous hair is, of course, trying, but it is also remunerative, and as the demand for a knowledge of this process is continually growing, the modern operator must at least have an understanding of this method. All necessary accessories should be obtained and used as directed. Each case should be studied and work done accordingly, bearing in mind always that a painstaking effort will ever produce excellent results. The experience of a few weeks will convince any bright woman that the field is not only a good one, uncrowded, but is also extremely interesting as well as decidedly beneficial from a financial point of view.

Before attempting to charge and use a zinc-carbon, bichromate, fluid battery the beginner will do well to heed the following directions: It is quite as necessary to know how to make the fluid and fill the cell as it is to make the proper connections and proceed with the work. Much difficulty may be avoided by sufficient care in mastering these preliminary details.

The battery fluid is best made by means of the following directions.

To make the battery fluid: R—Sulphuric acid (commercial), 3 fluid oz.; powd. bichromate of soda, 3 oz.; water, 16 fluid oz.; bisulphate of mercury, 2 drachms. Dis-

solve the bisulphate of mercury in the water; then add the bichromate of soda. Slowly pour in the sulphuric acid and stir until the ingredients are dissolved, then allow the liquid to cool, as the mingling of the acid and water produces heat, and if the mixture is used when warm it injures the battery.

The bisulphate of mercury keeps the zincs well amalgamated.

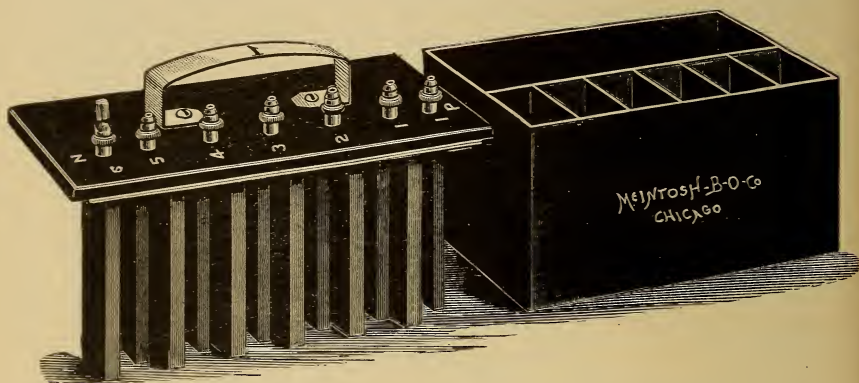


Figure 1.

Figure 2.

Fig. 1 shows the hard rubber plate of a section (on the under surface of which is cemented a sheet of soft rubber). The binding posts which project through the hard and soft rubber screw into the brass piece holding the zinc and carbon couples. The rubber plate on which the couples are clamped projects over on one side enough to cover the cells when the zinc and carbon plates are placed in the drip cups. When the cells are not in use and the lid of the battery box is closed, it presses on the *spring handle* of the section (Fig. 1) and holds the soft rubber firmly over the cells and drip cup. By this arrangement the hydrostat is made water-tight.

Fig. 2 shows a section of six cells and a drip cup made of one piece of hard vulcanized rubber. The drip cup is to receive the zinc and carbon couples when not in use.

By the aid of a simple current selector any number of cells can be used. See cut.

To use six galvanic cells lift section 1 and remove the elements from the drip cup; carry forward and place them in the galvanic cells; then connect one conducting cord with P1 and the other with N6 (all parts marked P are positive and N negative).

To use twelve cells lift section 2 from the drip cup, move it forward near section 1 and place the elements in the galvanic cells; connect N6 with P7 by means of the horizontal bar and the conducting cords, one with P1 and the other with N12.

How to Detect the Galvanic Current: Put one sponge, well wet, in the palm of the hand and let the other be held between the thumb and the first finger of the same hand. A slight pricking sensation will be experienced. Those only accustomed to the induced or Faradic current will be disappointed to find the galvanic current causes only a slight pricking or burning sensation, or perhaps a slight dizziness when applied to the head. A galvanic current that can scarcely be felt in the hand may be too strong to apply to the head or neck. Acute sensation or shock from the galvanic current is only experienced when the current is suddenly broken.

The bifurcated or forked cord is for the purpose of preventing a shock while changing to a less or greater number of cells while using the galvanic current. For example: Suppose you are using seven cells. One of the bifurcated ends would be connected with cell No. 7 and the other end hanging loose. If you wish to use, say twelve cells, take

up the loose end of the bifurcated cord and connect it with No. 12 before you pull the other end out from No. 7. Thus all shock is avoided in the change. The same method of procedure is necessary to prevent shock when reducing the number of cells in use.

To use the Faradic section of the battery holding the coil lift the section marked O from the cell and drip cup, fill the large cell half full of battery fluid, reverse the section and

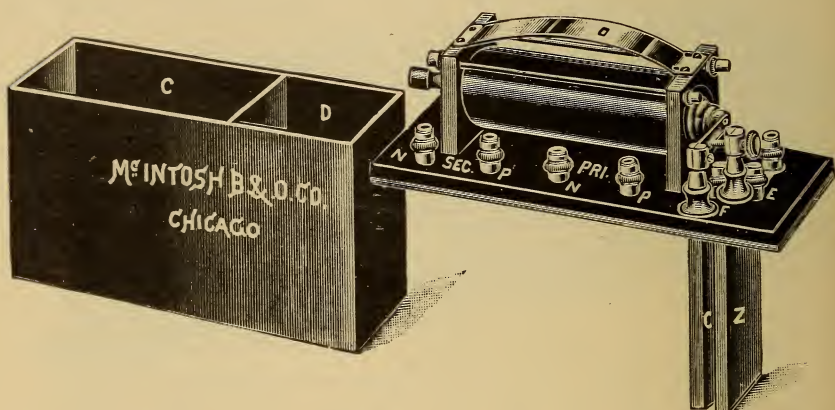


Figure 3.

Figure 4.

place the elements in the large cell C and the battery will commence to work at once, which may be known by the buzzing of the rheotome. To obtain the primary current insert the tips of the conducting cord in posts P and N, on either side of "prim." To obtain the secondary current insert the cord tips in posts N and P on either side of "Sec." Either current can be made stronger by drawing out the shield in the coil.

To connect the coil with one or more galvanic cells: In a case of emergency, like an attempt to resuscitate a person from drowning, where greater intensity is needed than one

cell will give, the coil can be connected with the galvanic cells of section I by means of the long, spiral wires, as follows: Reverse the coil section, immerse the elements of section I and connect post A near the coil with post P1 on section I, and post B on coil with post 2, 3, 4, 5 or 6, on section I.

Sometimes the inexperienced operator will say: "I have fluid made according to formula, but I cannot obtain a current even from twelve cells. When I immerse the elements in the fluid the liquid boils or froths and the battery gets hot, the zincs are rapidly eaten up, but I get no current." When such conditions are observed it shows that the battery fluid is not made according to formula, but contains too much acid. When the battery fluid contains large excess of acid the zinc is rapidly destroyed, the fluid bubbles or boils and becomes hot. Hydrogen gas is generated, but no electricity. The remedy in such a case is to add one-third to one-half its volume of water to the battery fluid.

Diluted acid acts very slowly upon the zinc; there is no violent action; the fluid does not become hot; there is very little generation of hydrogen gas, but a good and constant current of galvanic electricity.

The McIntosh galvanic battery is constructed with its metallic cord tip fitting firmly into the metallic binding post, which in its turn is screwed firmly into the metallic bridge, and this bridge securely fastened by metallic connection to the zinc and carbon plates, so that when the zinc and carbon elements are in good condition, and the fluid properly compounded, and the conducting cords all right, it is impossible to avoid getting a satisfactory current through the electrodes when the elements are immersed in the fluid.

CHAPTER XVII.

THE REMOVAL OF SUPERFLUOUS HAIR.

The galvanic current is always indicated in the work of removing blemishes, such as superfluous hair, moles or warts, as well as in treating enlarged blood vessels and in curing the vascular nævi. In the work of removing the hair at least four cells will be required to begin with, while ordinarily the current from six will be used. It is well to have both sections of the battery filled so that more cells can easily be brought into circuit as required. In getting the battery ready for use the compartments are filled by means of the cup with the liquid called a bichromate solution. This liquid is an acid that is very destructive, hence it is well to have the battery placed on a large tray of metal and while pouring in the liquid a blotter should be kept in the other hand ready to at once remove any of the drops. As soon as the compartments are filled the zinc and carbon plates are immersed in the liquid, the small metallic bar is fastened at the back connecting one section with the other, and the galvanic portion is ready for use.

As a measure of economy in conserving the strength of the battery it will be well at the commencement of the treatment to allow the second section of cells to remain resting in the drip cup until it be found that more than six cells will be required, then immerse the elements of the second section in the fluid and fasten the metallic connecting bar into its place, and the relay of six fresh cells is at once brought into readiness for use.

The greatest demand will be in the removal of superfluous hair. In this work not only the galvanic current is re-



Figure 11.
Removal of Superfluous Hair.

quired, but also a needle holder, needles of various sizes, made preferably of either gold or iridio-platinum, a small



Hard Rubber Needle Holder.

pair of forceps and either a magnifying glass, an electric headlight or both. In Figure 12 the use of the lamp is clearly indicated. If it has been impossible to obtain instruction



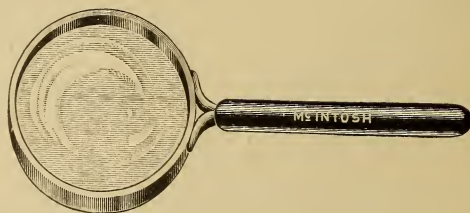
Hard Rubber Needle Holder.

in this work the beginner who wishes to attempt the process will do well to practice first upon the coarse hairs found on the arms and hands of those inclined to this growth. The



Depilatory Forceps.

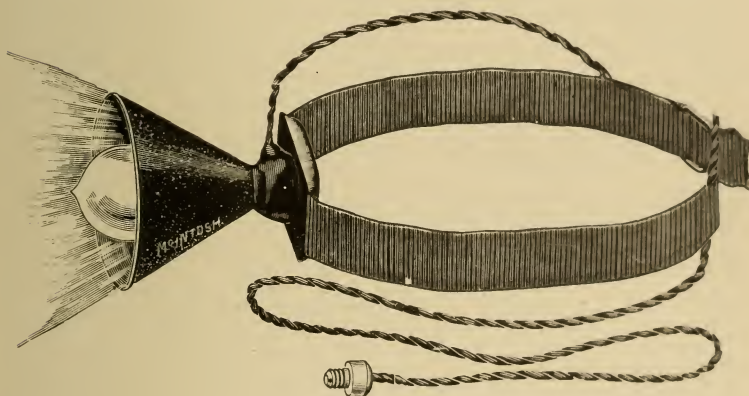
first trial will show that practice is the most essential point in good work, for not only a knowledge of the proper procedure is required, but also a sure eye and a steady hand.



Magnifying Glass.

Before beginning work the patient should be placed in a comfortable position, as near a clear, strong light as possible.

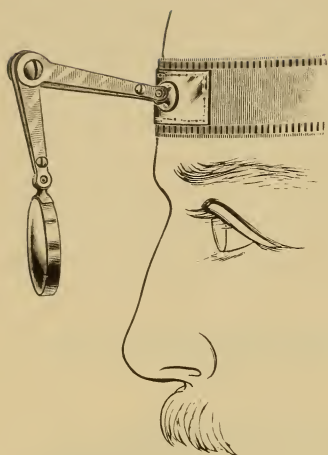
If the day is dull and the light uncertain, the head lamp must be used, otherwise the magnifying glass attached to a head-band will be found of great service. If the lamp is employed the long cord at the back is attached to the street current and managed in the usual way. A slightly recumbent position is advisable for the patient, as in this way all the muscles are more or less relaxed and the tension is not so great. The cord to be attached to the negative pole is placed



Head Lamp for 110 Volt Current.

in the section marked N, according to the number of cells that are to be used. If four, then the cord is inserted in the second opening from the front, as shown in Figure 12. The cord attached to the positive pole is inserted in a similar position in the section marked P, and is attached either to the carbon disc or sponge electrode and placed in the lap of the patient.

The object in using a needle attached to the electric cur-



Magnifying Glass, mounted on
Head Band.

rent is to destroy the tissue composing the hair papillæ. Naturally, a small portion of the surrounding tissue must be affected by the current, and the problem confronting the operator is how to remove the hair growth with as little destruction of tissue as possible. It has been found by experiment that the negative current is by far the best for this purpose, and hence it is always employed, as the effect on the tissue is not only less severe,

but the danger of scarring is not nearly so great.

Note—When the positive pole is used, it is essential that the needle be either gold (not gold plated) or platinum, as these metals are not attacked or corroded by the current. If a steel needle is used as the positive pole, a deposit of iron salt will be left in the hair follicle, and a black scar will inevitably result. An additional reason for giving preference always to the negative current is that negative electrolysis produces alkaline hydrates, destroys less tissue and allows the needle to be easily withdrawn. Positive electrolysis, on the contrary, releases oxygen acids, coagulates the albumen, destroys tissue and causes the needle to adhere, making it difficult to withdraw the needle without lacerating the tissue.

In order to destroy the hair, it is necessary to enter the follicle with a bulbous or pointed needle, the majority of the operators preferring the bulbous variety. The depth

of the follicle varies greatly, in some instances being not more than one thirty-second of an inch, while in others it is fully one-quarter of an inch. In finding the follicle it will be necessary to insert the needle as closely as possible by the side of the hair. The difference in the sensation of touch when the right path has been entered is usually sufficient proof of success.

At any rate, when everything is in readiness the needle is inserted as directed, and is continued until it meets a slight obstacle. There it must pause, while the patient grasps the positive electrode in her hand, thus completing the circuit. If the follicle has been entered, in about twenty seconds bubbles of hydrogen gas will commence to appear about the site of the entrance. In fifty or sixty seconds the hair should be grasped by the epilation forceps and a gentle pressure exerted. If the process of destruction is complete the hair will come away instantly. If not, the current should be continued, and at the end of a minute another attempt should be made. If the hair comes out easily now it may be inferred that the work has been properly done. In case it does not come out at the last effort it is well to remove it forcibly and then enter the follicle with the needle for about half a minute in a further attempt to destroy the hair. Practice on the coarse hair of the hands will teach more than words can, for in this work an intuitive knowledge as well as a delicate touch are wonderfully good guides.

The selection of a needle is an important item in this operation, and the point should always be examined with a strong glass that we may be able to ascertain its shape. An ordinary jeweler's broach will do if the point be ground off on an oil stone, and its temper drawn by heating, but the bulbous pointed needle, as recommended by the late Dr.

P. S. Hayes, a magnified drawing of which is here shown in Figure A, is best suited for the work. There are several very important reasons why a sharp-pointed needle should



Figure A.

not be used: First, there is a depression in the epidermis at the base of every hair, very plainly shown in Figure B. The bulbous-pointed needle will always find this depression, while the sharp-pointed needle is just as liable to miss it, and not get into the hair follicle at all. Again, the hair follicles are not always the same depth or the same direction, but the sheath surrounding the hair is tough; in fact, it takes considerable pressure to force the bulbous-pointed



Figure B.

needle through, and it naturally will find the proper depth, while, as Dr. Hayes remarks; "the sharp needle would, in many cases, penetrate the walls of the follicle and wander into the tissue far from the desired point, and failure rather than success would be recorded." Many hairs are removed with sharp-pointed needles, and many writers advocate their use, but success is purely accidental. Figure B shows a magnified hair shaft and follicle into which a sharp-pointed needle has been plunged and has not entered the depression at the free surface of the skin, but which has accidentally penetrated the sheath from without and gained access to the papilla. Of course, such hair will be permanently destroyed. By referring again to Figure B, it will be noticed that the sheath is narrowest at the top or at the point of

insertion of the hair shaft into the epidermis, which shows the necessity of actually following the hair shaft with the needle in order to be certain of entering the follicle.

Again, the bulbous needle presents a larger surface within the hair follicles, the benefit of which is apparent.

The illustration—Figure 11—shows how the work may be performed. The connections in this case are for four cells. The third cord, or section of the negative cord hanging down, may be used to bring another cell into circuit without disturbing the other connections. The head lamp is used in this instance, as the light thrown on the face is so brilliant that fewer errors in placing the needle will be made, while the ease with which it may be attached and worn makes it possible for the operator to utilize many dark days for working purposes.

Caution must be observed in several particulars in this work, and it may be well to impress upon the beginner that, first of all, it is wiser to use a weak current for a long time than a strong current for a short time. In removing hair it is never advisable to continue the current for more than a minute or a minute and a quarter, unless the hair is very coarse and bristly. Of course, in this instance it must be used as needed. Too many insertions in the same sections should be avoided in order to prevent an inflammation, thus making work impossible for several days. By using discretion in selecting different places upon the face the work may be continued for at least twice as long as where it is confined to one portion, and treatments may be given in this manner as often as every other day until the hairs are removed.

After a sitting has been ended, and here it is well to repeat that one-half hour should be the average duration for both patient and operator, the portions worked upon

should be well massaged with zinc ointment, or if none is obtainable, the acne cream may be utilized. In this massage care must be taken to use only the zinc ointment made for this purpose, as otherwise the effect will not be as good. After the flesh has been well manipulated the zinc powder may be dusted on, and then all that does not cling, removed by drawing a soft cloth or bit of cotton softly over the face. The patient should have it thoroughly impressed upon her mind that no soap or water should touch the places worked upon until the tiny crust has disappeared. Night and morning the ointment may be rubbed in well, and if it is necessary to cleanse the face the lettuce cream may be used about these portions, using water, of course, on the rest of the skin.

The importance of this precaution cannot be overestimated, for the zinc ointment certainly possesses a marvelously soothing influence on any surface that has been subjected to the electric current, and in the author's experience, wherever care in this respect as well as in the use of the needle has existed, there has never been one case of scarring.

CHAPTER XVIII.

THE TREATMENT OF MOLES, WARTS AND NAEVI.

The removal of pigmented elevations upon the skin is one for which the demand is continually growing. The use of caustics of various kinds was, in former years, quite sufficient to remove these disfiguring portions, but as the destruction of tissue could not be limited to the affected area, the resulting scars deterred many from the attempt. In the use of electricity for this purpose, if sufficient care is manifested, the growths may be easily removed with little pain, and will leave but a small pit to mark the site. In some instances not even a depression can be found, and the skin appears perfectly smooth.

There are so many varieties of moles that it will be simply confusing to mention them, describing peculiarities of structure and appearance. No matter which variety is found, the treatment is the same, and the negative current will be used for the purpose of removal. In Figure 12 the process is clearly illustrated, showing not only the moles, but also long, bristly hair, making the treatment more difficult.

In every case of this description the hairs must be removed in the manner described before working on the moles, as otherwise the use of the current might destroy them, and if allowed to remain, trouble could result from the hairs festering. When there are a great many bristles it is well to limit the first treatment to the removal of all that will come out easily. The next treatment may be given in two days and the balance removed, and on the third the work will be done as though the mole was to be freshly treated.



Figure 12.
Removal of Mole.

This is, of course, unless a crust or scab has formed. In this case no more work can be done until it has gone. The use of the zinc ointment at home will hasten this process and the patient may be told to return as soon as the crust has disappeared. In some instances the mole will also have vanished and no further work will be necessary.

In actual practice at least six or seven cells are required, and in many instances ten and even twelve will need to be employed. The illustration shows but four, as it is wiser to begin with a small number until one has found out just how many can be used without inconvenience. The patient will hold the positive electrode and the operator will insert the needle into the mole in a vertical direction, allowing it to remain for about a half minute at each insertion and making from six to eight of them. If the current has been strong enough bubbles of hydrogen gas will be observed and the mole will appear blanched. Even the darkest mole will change during this work. If the surrounding flesh has not assumed a pinkish cast during this work the needle may now be thrust through in a horizontal position, having it nearly level with the skin as possible, and leaving it for twenty or thirty seconds. This process may be continued for two or three minutes, choosing a different point for entrance each time and watching carefully to see that the normal skin does not become reddened. As a rule, the work on one mole at any one time should not exceed five minutes, unless it is extremely large. In ordinary cases three treatments will be sufficient to cause the growth to disappear, leaving but a red mark where the mole has been. By rubbing with zinc ointment this color will gradually fade away.

If the current has been continued too long and the inflammation seems difficult to subdue, it is wise to defer further treatments for at least one week. In inserting the

needle after such an experience it is better to use a weak current, observing the mole and the surrounding flesh to see how it is affected. If the skin becomes a deep crimson do not attempt any work, but wait until it may be used without this effect. The scab or crust that forms on the moles is either very light or a dark brown and may take some weeks to disappear. As in the treatment of superfluous hair, the patients should be warned against attempting to remove this crust and should be cautioned against irritating the skin in any way.

In the work on warty growths it is wise to use a larger needle, employing either the gold or the iridio-platinum, as the inflammation seems not to be so great when these metals are utilized. The dark, soft moles and the pinkish variety respond more readily to treatment than others, though, of course, there are also exceptions to this rule, and it is unsafe to promise results in any given number of treatments. In many cases two or three treatments have been all that was necessary, and in others eight and even ten and twelve have been found requisite.

Of course, one is positive that a thick, warty growth will be found more difficult to remove, and will take a stronger current as well as more treatments, but cases that are especially obstinate are so often seen that the operator will do well to explain this peculiarity to each new patient, thus exciting no false hopes and running no risk of disappointing them. The statement that the moles may positively be removed though the number of treatments cannot be told is usually sufficient to encourage a desire to have the work done.

Nervous patients must be especially cautioned against touching the portions operated upon, as in this manner many scars are caused. The positive request that nothing

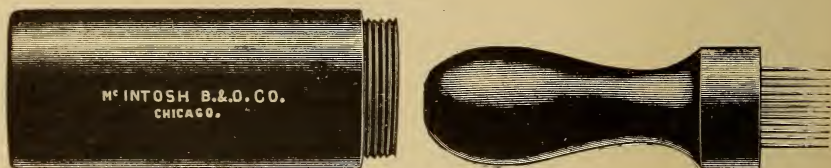
but the ointment touch the spots will usually result in a very small pit to mark the site of the mole. This spot will gradually grow smaller until in a short time it is barely perceptible.

Warts are removed in the same manner as moles, but as the substance composing them is dry and hard to penetrate, it is wiser to use a larger needle, while the current may be employed for a longer time. Ten and even fifteen minutes may be employed in the treatment of large growths, and the same rule that applies to the moles may be used here, for as soon as the surrounding tissue is at all affected the use of the current must be stopped.

In connection with the removal of moles and warts it is well to be extremely cautious in the use of the right pole. There are several ways of telling which is right, aside from the fact that the sections are marked either negative or positive, but as too many directions are more confusing than none, the ones that follow will be sufficient. With the negative pole, one may observe the ease with which it enters or is removed from a growth. Another proof is found in the bubbles of hydrogen gas forming about the needle. The use of the positive pole is shown by the way in which the tissue clings to the needle, and if the steel needle is used, by the black mark that is left in the skin, caused by the oxidation of the metal. Thus a careless operator may remove a growth, but leave in its place a mark that shows the error in treatment.

In the work of removing *nævi*, or wine marks, one of two methods may be employed. If the discoloration is small, the platinum needle may be used, attached, of course, to the negative pole. This needle should be inserted first in the center of the growth, and then at least five punctures should be made in the tiny capillaries which radiate from

this source. Should the growth be larger, the second method may be employed. This calls for the use of the needle disc, and in this method the entire area is treated by a single application of the numerous points. In some instances, much blood escapes from the tiny apertures. This generally lasts but for a few moments, and is of no consequence. If, however, it seems desirable to alleviate this condition, the application of the positive electrode by means of a platinum needle will almost instantly produce the desired result.



Needle Disc.

For the removal of "Pigmentary Nævus" or wine marks.

IMPORTANT FEATURES OF AN OUTFIT.

The three features which are considered by most dermatologists in the selection of a battery and outfit for this class of work are, in their respective importance; Reliability, simplicity and portability.

The twelve-cell fluid battery must ever hold the palm for entire reliability, but there are many operators who will insist upon the convenience of the simple and more easily portable dry cell battery, and to all such we commend the McIntosh dry cell electrolysis battery. In designing this battery all of these points have received due consideration. It is fitted with six Columbia No. 4 dry cells—cells which we have found to be the most reliable. With ordinary use and proper care they should last for from six months to a year.

DIRECTIONS.

The sponge electrode, well moistened, should be attached to one end of the conducting cord, and the tip on the opposite end of the cord should be inserted in the socket marked + (plus). This sign always indicates the positive pole.



McIntosh Dry Cell Electrolysis Battery.

The needle holder should be attached to the conducting cord and the free end of the cord should be attached to the post corresponding to the number of cells it is desired to use; post "1" for one cell, post "2" for two cells, post "3"

for three cells, etc. It will be found that three or four cells are sufficient to perform any ordinary work. When both the sponge electrode and the needle come in contact with the patient the circuit is completed.

CHAPTER XIX.

BLANCHING THE SKIN, DISCOLORATIONS AND USE OF FARADIC CURRENT.

A most mortifying condition, and one frequently encountered, is that in which the nose assumes a most decidedly red hue, varying from the lightest tint to deep purple. Close examination generally reveals a network of bright capillaries traversing the nose and cheeks for a short distance. The use of the electric needle is here found most excellent in results and it should be employed without hesitation. In this treatment the opinions of the various operators have been far from uniform, as some insist that the positive pole shall be employed, while others are equally firm in their praise of the negative. However, in actual practice, the author has found that the negative pole filled all requirements. It is best used by introducing the needle into the blood vessel and allowing it to penetrate a certain distance, then closing the circuit as usual by having the patient clasp the positive electrode in her hand. It is wisest to choose the largest vessel in beginning the work, as the destruction of this will also affect the tiny branches, and fewer insertions will thus be required. But a short treatment will be necessary for cases of this kind, and in no other trouble is the benefit more readily seen.

When the flesh seems reddened and inflamed without the dilation of the capillaries, much can be done by applying the electrodes as shown in Figure 13. The absorbent cotton is moistened before being placed in the electrodes, and the current may be continued as long and as strong as the patient can endure it. The skin will become extremely red



Figure 13.
Using the Galvanic Current.

after a time, and the burning sensation will be experienced. Ten minutes is long enough for a treatment, and for some time after it is ended the redness will persist, but will finally give place to a much lighter appearance for some hours. Treatments for this trouble should be given at least every other day for two or three weeks until the improvement has become permanent.

This work is especially beneficial after blackheads and pimples have been removed from the face, and it is necessary to improve the nutrition of the skin. In acne rosacea this method is much used and is extremely efficacious. Of course, if the capillaries are dilated they are to be treated as directed, and the bi-polar method used afterward.

In the use of the electrodes upon the face or near the head care must be taken, as in other cases, to commence with fewer cells, as some people are so sensitive that they complain of dizziness when electricity is used. If the patient is extremely nervous and is subject to headache, one of the electrodes may be placed at the back of the neck and the other upon the face, thus causing a general as well as local effect, and sometimes improving the physical condition as well as the nutrition of the skin.

HOW TO REMOVE DISCOLORATIONS.

Many times there will be a demand for something that will quickly whiten or bleach some portion of the skin, and the use of electricity has in such instances been particularly beneficial, for by its aid the substances to be employed may be forced into the skin, thus affecting directly the portions that require treatment. The most obstinate cases of moth patch and freckles have been speedily affected by this method when other means have failed, while in any process the results are more rapidly attained.

Experiments have proved that by moistening electrodes with certain substances and applying them to the unbroken skin, making the current sufficiently strong, the materials have been forced into circulation. For instance, concentrated solutions of sulphate of quinine and iodide of potassium can be detected in the urine thirty minutes after they have been applied to the skin. The amount detected after four or five hours is even greater, showing that the process has been going on steadily. In all of this work the idea is, of course, to cause the drugs to enter the circulation.

In bleaching the skin there is only a desire to cause the fluid to penetrate a certain distance in order to remove the discolorations. Great care must be taken to select liquids that can be used with the positive pole, as otherwise the work will be useless. The bleaching lotion mentioned elsewhere has been found most excellent for this purpose and may be used by moistening the cotton thoroughly and placing it in the positive electrode. The negative electrode may be used with cotton moistened with salt and water and held on some indifferent portion of the skin, or as indicated in Figure 14. At least fifteen minutes may be spent for each treatment and the current from six cells may be employed to begin with, gradually increasing them to ten as desired. Where the effect of a general bleaching is desired the current may be used longer, say twenty minutes, changing the poles, instead of using the positive alone, by substituting the negative occasionally. Treatments of this kind are better given after the water massage has been used, and will be found to be most effective when they are given at least three times a week. Mild discolorations may be removed with greater ease and will demand far fewer treatments.



Figure 14.
Massage with Use of the Faradic Current.

USE OF ELECTRICITY IN MASSAGE.

In massage of the skin, where there is a desire to stimulate, the Faradic current is usually employed. In addition to the desired effect there is a pleasant tingling sensation, which to many people is really most soothing. Neuralgic pains of the face and head are quickly relieved by this current, while nervous headaches vanish so speedily that the cure seems remarkable.

The Faradic portion of the battery is used much as the galvanic section. The current is produced by immersing the plates in the solution, and the fact that this portion is in working order may be told by the humming, buzzing noise that commences as soon as the plates are in position. The current is utilized by attaching the conducting cords to the posts marked P and N and increasing the strength if necessary by extending the little shield that projects from the right of the coil.



Wrist Electrode.

In massage work the patient holds one electrode in her hand, while the operator fastens the cord to her wrist electrode, as shown in Illustration 14. The current thus passes through the fingers of the operator to the face of the patient. The directions in the rules for massage

may be observed here, being careful not to extend the use of the current for longer than twenty minutes at any time.

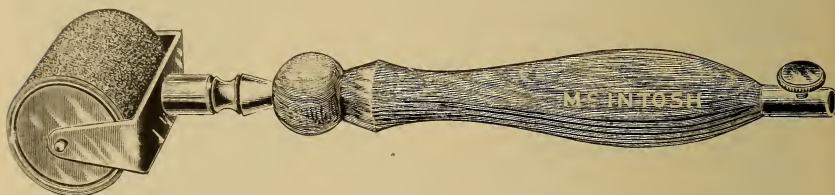
A way of uniting the cleansing and stimulating treatment in one operation may easily be practiced by the use of the same apparatus just as described and applying the



Figure 15.
Use of Massage Roller.

water massage at the same time. This can be easily done and is considered an exceedingly beneficial treatment. The current used in this method will need to be very light, as otherwise the shock will be too great.

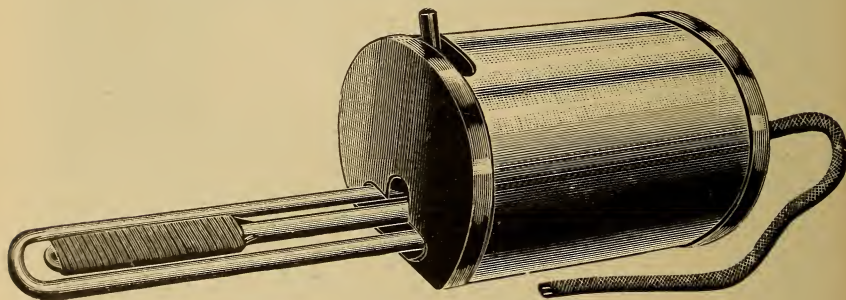
The massage roller, Figure 15, may be used by attaching



The Massage Roller.

it to the conducting cord and applying as it may most be needed. Of course, in all of this work the positive pole is the one to be applied to the skin for the purpose of stimulation, while the negative electrode is either held stationary upon the skin or is clasped in the hand.

The vibratile is a most excellent article for use in this



The Vibratile.

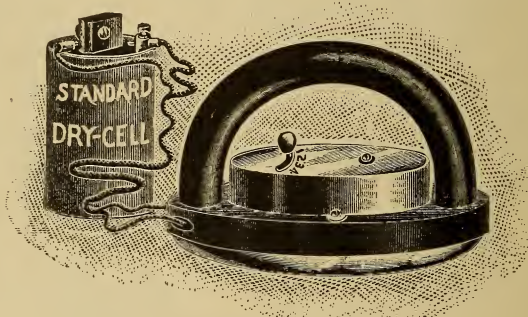
work, and is easily managed, as shown by Figure 16. It is connected to at least four of the galvanic cells and is applied by gently drawing it over the face, causing a stimulating effect difficult to describe. The rapid interruptions cause vibrations deep enough to affect the muscles power-



Figure 16.
Use of the Vibratile.

fully. This instrument is particularly beneficial in the treatment of flabby skins, the reduction of a fat neck and also in the stimulation or development of the breast.

The neurotone, as illustrated in Figure 17 is also a valuable adjunct to facial work. It is generally used in the treatment of flabby skins, and as shown may be utilized for pressing out the deep creases in the forehead. The remarkable results in restoring tone to the skin by the use of this instrument has made it exceedingly popular with the best operators. As indicated in the illustration, it is used with the Faradic current; however, in some instances, the connections ordinarily used will not produce sufficient cur-



The Neurotone.

rent to give the desired effect. In case the connections to the secondary binding posts do not produce a sufficiently powerful current, it may be increased by this method. One cord may be attached as usual from the negative secondary binding post to the neurotone, while the other bifurcated cord may be attached to both the positive secondary and primary binding posts, making the connection to the neurotone as before.

The Faradic current is also employed with very pleasing



Figure 17.
Use of the Neurotone.

results in the treatment of the scalp, and here it acts as a most reliable tonic, promoting the growth of the hair to a remarkable degree and improving the condition of the scalp. In Figure 8 the use of the electric hair brush is shown, and this is, perhaps, the favorite method for administering the current. If the bristles seem a little too sharp and the patient is sensitive the tips of the fingers may be used on the scalp after the wrist electrode has been connected. In this way the current will have a milder effect.

There are many other ways of using these currents, but as each operator has her own particular class of people to treat, she soon becomes accustomed to the methods best suited to her work and uses nothing else. In the use of electricity the same rule applies and only experiment and study can teach which is best suited for her purpose. With the experience acquired through persistent application and study any clever woman can soon achieve marked success in this field.

CHAPTER XX.

THE CARE OF THE HANDS.

The woman who wishes to preserve the beauty of her hands can easily do so if she will devote at least five minutes a day to the work of attending to them. This will, of course be in addition to the weekly manicure, for in actual care the attention of a professional will be secured at least as often as this. It is said by close observers that hands show the beginning of age much sooner than the face, and that it is by this fact alone that many women otherwise beautiful have been unable to deceive their acquaintances in regard to the number of years that have flown. The flesh becomes flabby and withered in appearance, brown spots appear and the joints look as though much larger than formerly, simply from the falling away of the skin and the formation of the many folds. Care will remedy these defects to such an extent that a really fine-appearing hand may be preserved even in old age, hence the fastidious woman will do well to arrange for the expenditure of the necessary minutes each day if she wishes to maintain a reputation for youthful appearance.

In reading of a beautiful hand the mind naturally pictures the ideal of the artist, with firm white flesh, long, tapering fingers, delicately tinted, filbert-shaped nails and soft, pink palm. A pleasing vision, indeed, but one seldom seen, for the model hand is nearly as rare as the model foot, and the majority of people must be contented with one that will at least not be classed as "impossible," even if it cannot be called beautiful. A great authority has said that the truly patrician hand can only be found when there have

been generations of noble ancestors. The student of palmistry can easily contradict this fact, for experience proves that very frequently people of the humblest parentage possess hands so perfectly molded that the noblest might well long to possess them. The earnest thinker and close observer has never been found with a hand of this type, neither has the successful or ambitious business woman. The idle dreamers or artistic souls are usually those who claim the ideal hand, and it is well that this should be so, for they deserve some compensation for being so useless from a practical point of view.

The time to change or improve the shape of the hands, fingers or nails is that of infancy, and the careful mother will see that the tiny finger nails are treated with due attention. Infants who show a tendency to keep the fingers in their mouths not only change the shape of the finger and alter the beauty of the nail, but also spoil the mouth as well. This tendency may be checked by applying a solution of quinine to the tips of the fingers. As they grow older the tiny finger should be rubbed with oil, the cuticle pressed back with an orangewood stick and the nails trimmed carefully that they may be encouraged to grow long and slender. Biting of the nails must positively be forbidden and if necessary stringent measures taken to prevent the practice. Children should also be taught how to care for the hands and how to prevent the rough, red appearance so universally seen in childhood. It can hardly be argued that a child will not enjoy the playtimes as well without these bleeding, raw surfaces as with them, and by a very little work the habit may be formed that will be successful in preventing this condition.

The greatest amount of trouble comes because not one person in a hundred is taught to wash the hands properly.

Soap is a cleansing medium made of alkalies and fats. Combined with water a lather is formed that cleanses the skin. Allowed to remain on the skin and become dry, the alkali keeps on actively irritating the cuticle and the result is shown in the reddened and coarse surface. Soaps for cleansing purposes, such as the common household soaps, are invariably strongly alkaline and should never be used to remove soil from anything less delicate than wood-work. The mixture for the hands should be as nearly neutral as possible, and a soap of this description will not make much of a lather. Children should be taught that after the hands are cleansed by the action of the soap and water they should be rinsed off well in clear water and then carefully dried. If they are at all inclined to become chapped or irritated each time after the washing process a little jelly may be rubbed in well and the hands dried as usual.

A very good mixture for this purpose is called Rose Jelly. It is easily made and will be found excellent for general use.

ROSE JELLY.

Mucilage of Irish moss.....	2 ½
Glycerine	3 ½
Extract witch hazel (dist.).....	2 ½
Cologne	1 ½
Borax	30 gr.

Dissolve the borax in the witch hazel, mix with half of the glycerine and cologne and add Oil of Rose sufficient to perfume. Mix other part of glycerine with mucilage and then stir slowly into the part first prepared. After allowing it to stand three hours, strain and it will be ready for use.

This jelly when properly made will not have an oily effect and will dry in immediately. It is best applied while

the hands are still damp. At least once a day after the hands have been thoroughly cleansed the cuticle should be pressed back with an orangewood stick and the nails thoroughly rubbed with chamois skin. By folding this over the first finger it may be made into a most excellent buffer for polishing, using it alternately on the first finger of each hand as it may be required for polishing the nails of the other.

Women of leisure and wealth rarely either require or need advice as to the care of their hands. It is those who are so occupied that they cannot take time to consult the expert or to those who are situated away from large centers or those, who though possessing the inclination, have not the money to spend on this work, that these lines will be most welcome. The woman who does her own housework may not always admit it, but the one great disadvantage that fills her with dismay is not so much the labor involved as the unsightly appearance her hands present.

Much of this difficulty may be avoided not only by care in the use of soaps, and in cleansing the hands, but also by efforts made to save them from all unnecessary trials. For instance, in washing dishes, hand mops can be purchased that will do away with the necessity for keeping the hands in water so long at a time. Rubber gloves are also a wonderful aid in this respect. When the work of sweeping or other heavy labor is to be done the soft palms should be protected by an old pair of gloves, very loose and soft enough to prevent callous lines from appearing where the seams are joined. In every part of domestic arrangements much may be done by expending a little thought to make the demand on the hands very much less.

When the hands are very red and appear swollen, physical culture will do much toward overcoming this proof of

poor circulation. Tight lacing is now so little practiced that few women are guilty of undue compression, otherwise it might be mentioned as a frequent cause of the trouble mentioned. Another difficulty equally embarrassing and one more difficult to cure is that of undue perspiration, in which the palms are constantly moist, ruining any gloves the first time they are worn, and making the act of shaking hands a positive torture. This last trouble may frequently be entirely cured by dusting this powder over the palms each time after washing them.

DUSTING POWDER.

Boracic acid	1 $\frac{3}{5}$
Alum (powdered)	2 $\frac{3}{5}$
Salycilic acid	1 $\frac{3}{5}$
Talcum	2 $\frac{3}{5}$

Mix together and sift through several layers of bolting cloth until ready for use, then dust on as required.

Cosmetic mittens worn at night do much to soften the hands and make them presentable, but if the work during the day is extremely trying, it is often unwise to attempt wearing them, as the hands are made so much more tender that they become rough more readily upon immersion in soap and water. For those who have no particular demands upon them for undue exertion the use of the mittens each night will certainly do wonders. They are prepared in a number of ways, and there are numerous recipes for the paste-like mixtures, but none of them are better than the one that follows:

WHITENING PASTE.

Rub into one pound of honey enough of the powder of almonds to make a stiff paste, and then add gradually the whites of eggs until six have been used. Stir in twelve

ounces of almond oil, six ounces of solution of alum (saturated) and four of borax. Mix well, and if too thin add more almond meal. This is to be used by spreading upon the hands at night and then drawing on large mittens or loose gloves to protect the clothing. Another method is to spread the paste on mittens before applying, but the effect is more uniform if spread directly upon the hands.

In the morning wash off with warm water, and before the hands are entirely dry rub in the rose jelly.

At no time will hands appear to worse advantage than just when they should look the best. This is invariably the case on the occasion of some dinner of state occasion where these important members must be decidedly in evidence. More than one woman has shed bitter tears as the last moment approached and the red or discolored appearance was as obtrusive as ever. A remedy that may be applied to very good advantage will doubtless be appreciated by those so bothered. This cream is too startlingly white to be used on the face, but may be rubbed in the hand whenever the occasion demands, with the happiest of results. It is best applied immediately after cleansing the hands well with soap and water, and is easily prepared. A clever woman who used this preparation with the happiest of results declared that to those who were obliged to resort to anything of this kind the only appropriate term for this preparation was the Slave's Delight. It is made by sifting the subnitrate of bismuth into the blended oils and then stirring until smooth.

DISGUISE FOR RED HANDS.

Almond oil	4	ounce
Lanolin	1	
Spermaceti	1	
White wax	1	

Subnitrate of bismuth	1 5
Oil bitter almonds	10 drops

In addition to home care every woman who can afford it employs the professional manicure at least once a week and oftener if necessary. The treatments when given by one who thoroughly understands the art is so pleasing that the expense of the work is but a small consideration. There has been a tendency of late years to make the fee for this work less. When one stops to consider that a good manicure cannot be given in less than one hour, to say nothing of the amount of material that must be used during the process, the complaints against the first-class professionals who persist in charging living rates will be heard with less patience. A thoroughly good treatment will consume the greater part of an hour, besides involving the use of much material, and, if the work is to be well done, the remuneration must be in proportion.

The tools necessary for this work vary, as used by the different schools of manicuring, but should always consist of at least those in the following list.

- 1 package of orange wood sticks.
- 2 buffers.
- 2 scissors.
- 2 files.
- 1 package emery board.
- 1 box polishing powder.
- 1 box ointment.
- 1 box fine pumice stone.
- 1 bottle cleansing liquid.
- 1 cuticle knife.

The best professionals generally commence the treatment by trimming the nails and shaping them on one hand, while the other is placed in the warm soapy water. After

a few moments the hand that has been soaked is taken in charge and the nails are brushed vigorously with the small nail brush and soap. The cuticle knife is then used for pushing back the flesh that has encroached upon the surface of the nails, and the orange wood stick is employed to push back the skin at the base of the nail. If the under part of the nails seem much discolored, a mixture of pumice stone and cleansing liquid, such as ongaline, is placed all about the selvage skin, just inside the nail, and allowed to remain for a time. During this process the second hand should have been soaking and should be ready for the work just described.

The first hand is once more ready for treatment and the work of removing the pumice stone is now commenced by the use of the orange wood stick. If there is still discoloration in any nail the mixture must be replaced again. A bit of the polishing powder is then sprinkled upon the buffer and the work of imparting the gloss is commenced. In this, care must be taken to avoid heating the nail and the strokes should be given in a leisurely manner. After the polishing with powder has been finished, a little of the white or rose colored ointment is rubbed on the nail, more powder is placed upon the buffer and the work again resumed. When the nails seem uniformly polished the hand is again placed in water and scrubbed well with the little brush. Examination now reveals the presence of roughness under the nails and perhaps several places where the cuticle needs attention. The emery boards are used for removing roughness under the nails and hang-nails that have not succumbed to the trimming given by the scissors are again retouched and then the polishing or kid buffer employed to give the final touch. The results should be nails finely polished, delicately pink in appearance and well

shaped, with no bleeding surfaces to make one feel that the tools had been more vigorously than wisely used.

The use of the scissors excepting in removing hang-nails or in clipping nails that are too long to file is but a small item. The best operators all employ the orange wood sticks whenever it is possible to do so, and they have them of all shapes and kinds. The cuticle knife is used most cautiously so that the enamel of the nail may not be injured while any acid that must be applied to remove stains is managed most warily, lest other trouble comes of it. The files are used as the case demands, the dainty velvet file doing the fine work after the heavier one has removed all portions that are not needed. The use of the cuticle knife beneath the nail should be avoided if possible, on account of the danger of injuring the under surface and making it rough.

The woman in business will hardly bother about preparing any of the articles needed in her work, as she can economize both time and money by purchasing those already prepared. Others who may wish to do a little of this polishing and shaping at home may use this recipe for a polishing powder:

Yellow oxide of tin (powdered)....	2 $\frac{3}{4}$
Venetian talcum	1 $\frac{3}{4}$
Petrolatum	1 $\frac{3}{4}$

Rub the petrolatum in with the talcum and then rub in the oxide of tin and sift through a fine bolting cloth.

The liquid for removing stains and for whitening the nails may be made by mixing these ingredients:

Dioxide of hydrogen	3 $\frac{3}{4}$
Lemon juice	1 $\frac{3}{4}$
Ammonia	1 $\frac{3}{4}$

The tinted cream may be made by adding a few grains of carmine to the recipe as a disguise for red hands, or if the rosy tint is not desired, the white cream itself may be employed. These simple substitutes are most efficacious in the hands of intelligent workers and may be recommended as at least being harmless.

CHAPTER XXI.

HOW TO IMPROVE THE ARMS, SHOULDERS, NECK AND BUST.

There is little excuse in this progressive age for the possession of scrawny necks, round shoulders, poorly developed busts and skinny arms. True, physical culture alone may not be able to more than fill out the hollows, but unite this system with massage and the use of the various ointments for refining the coarse skin, and the change will indeed be most marvelous.

A beautiful arm should be softly rounded, smooth and white, and should taper gradually to the hand. Many of the skinniest and roughest arms have been made over with marvelous success by the following method:

First, of course, comes exercise in the open air, playing games such as golf, tennis or croquet, and the use of the system particularly directed to the work of remedying any deficiencies that seem the most strongly marked. The cosmetic treatment will, of course, depend upon the condition of the skin, and if it is rough and covered with flesh that looks pimply, the work can be hastened greatly by bathing each night with warm water and paste soap, using wash-cloth of coarse variety to cause more friction. The arms may then be rubbed well with a good tissue food or *Crema Celeste*, using deep massage for at least fifteen minutes. In the morning cold water baths may be taken, and the massage treatment continued for at least three weeks. At the end of that time the roughness should have subsided sufficiently to allow a change, and this lotion may be applied each night:

Rose water	6 $\frac{3}{4}$
Tincture benzoin	1 $\frac{3}{4}$
Oxide zinc	1 $\frac{3}{4}$

Shake well and apply with a sponge and allow it to dry in thoroughly before rubbing; then commence the massage without ointment for a few minutes each night. By the end of five or six weeks there should be a marked improvement.

When, in addition to being skinny the arms are also covered with wiry black hair, the treatment is more difficult, for it is impossible to disguise the condition sufficiently to allow the use of short sleeves or evening dress. Hence the choice must be made between these two methods: The first consists of using a depilatory from time to time and thus removing the hair completely for a temporary period; the second is by using enough peroxide of hydrogen to thoroughly bleach the hair so that it will hardly be noticeable. If the first process is chosen the depilatory given here may be tried, and though said to be extremely effective in some cases, it is certainly a trifle severe in others and can never be applied with any degree of certainty as far as the after-effect on the skin is concerned.

DEPILATORY.

Orpiment	1 $\frac{3}{4}$
Quicklime	10 $\frac{3}{4}$
Starch	14 $\frac{3}{4}$

The ingredients must be ground into a fine powder and kept in a tightly corked bottle. When used, a small portion of the powder should be mixed with water into a paste and spread over the hairy portions. As soon as the paste dries, wash it off, and the hair will come with it. If the skin is extremely sensitive and commences to smart, the

paste will need to be removed immediately or the cuticle will be injured. In any event, as soon as it has been washed off, a mild cream should be applied.

If the peroxide treatment is used, the arms must be washed first with soap and water, then with a solution of soda and water, to take away all traces of oil that may be upon the skin. Then a mixture of peroxide and ammonia may be applied by means of some cotton or a soft cloth. This may be continued until the hairs are sufficiently bleached, and if the first treatment is not sufficient to accomplish the purpose, a second may be taken. The proportion of the two liquids should be one of ammonia to six of peroxide, and it is said that a continued use will make the hair so brittle that they will fall out, and in time cease to reappear. At any rate the bleaching process makes them much less conspicuous.

Deep massage is much used for toning the muscles of the neck and shoulders, and applications of various ointments and lotions are often necessary in order to make the skin look well. The best formed neck can never appear to advantage if its beauty is marred by the appearance of a deep mark of dingy hue encircling it, and this is an occurrence that is only too common. The cause is, of course, found in the stiff neckwear, either of linen or any other material that encircles the throat closely.

The cure is first of all in abolishing anything, but soft ribbons or other substitutes that will look as well. Next, in using a whitening cream each night for massaging the skin and last of all in applying a bleaching lotion until the discolorations have vanished. The use of cloths saturated in peroxide of hydrogen after the water massage is also excellent as an aid in hastening the process of whitening the skin.

The sagging of the flesh directly under the chin may, of course, be prevented by the use of proper massage, as illustrated in Figure 6, while the mallets may also be employed to advantage for the same purpose, and exponents of vocal culture declare that the proper use of the muscles in singing will be of great use for this purpose. The process is a trifle expensive, however, for those of ordinary means, so massage and exercise will generally be called the best aids.

The hollow spaces found about the neck and shoulders almost inevitably yield to exercise unless the individual is extremely emaciated. Applications of a nourishing skin food and the use of the deep plucking massage are extremely beneficial, while above and beyond all may be mentioned the use of the breathing exercises mentioned in another chapter. The shoulders of perfect beauty are usually an inheritance, for they should form a continuous curve from the neck to the arm, with no sharply defined departure to make the change. Physiological development will do much toward improving the carriage and toward broadening the shoulders, but of course cannot entirely change the original form.

If the skin should be rough and covered with small red pimples, a state frequently common during the summer months, the following treatment will be found most beneficial. First of all, a course of sulphur baths, followed by the application of this paste each night:

Honey	1 $\frac{3}{4}$
Alum sol.	2 $\frac{3}{4}$
Whites of eggs	2
Carbolic acid	1 $\frac{3}{4}$
Almond oil	2 $\frac{3}{4}$
Almond meal sufficient to make a paste.	

In the morning this paste may be removed by the use of warm water and a mild soap, and this lotion applied:

Rose water	6 $\frac{3}{4}$
Lemon juice	1 $\frac{3}{4}$
Borax	1 $\frac{3}{4}$
Alcohol	1 $\frac{3}{4}$
Glycerine	1 $\frac{3}{4}$

One week of this treatment should get the skin in very good condition, though if it is very rough it will also be necessary to use massage as well before the paste is applied. If necessary to appear in public in evening dress before the skin has become smooth enough to look as it should, the whitening creme may be applied and rubbed in energetically and then powder dusted on. Many famous beauties invariably use a creme of this description as a preparation for an evening toilet.

The development of the bust is a matter that creates much interest, for the woman who is thin declares, to be happy, she must be larger, while the over-developed one longs hopelessly for a decrease. The perfectly developed woman is, of course, neither one nor the other, but just right, and there should be approximately a difference of about ten inches between the size of the waist and the bust, and practically the same difference between the hips and the waist.

Proper exercise, bathing and light massage are the best remedies for increasing the measurements, and if due care is taken, there will be few poorly developed women aside from those suffering from physical weakness. The use of the many glass arrangements and metallic attachments advertised for this purpose cannot be too strongly condemned. In the hands of specialists they may do some good, but as a rule they are harmful beyond belief, and may produce permanent injury when applied by the novice. Massage of

the breasts should be most carefully done, after washing them with warm water and applying a good skin food. The movement should be performed with the flat portion of the hand, rubbing in a circular fashion around and around, and finishing with a quick dash of cold water. Deep breathing exercises will also be of great benefit, and those who have been able to take swimming lessons claim they can see a wonderful difference as a result. Electricity may also be employed to advantage by using the Faradic current for fifteen minutes daily.

The reduction of the breasts desired by overly stout women should never be attempted by the amateur, for there is too much danger of causing some injury which may later develop into a malignant growth, as this portion of the body is peculiarly susceptible to trouble of this kind. The use of bandages wet in solutions containing lead have been much in vogue and cannot be too vigorously forbidden, as the absorption of this poisonous material into the system is even more dangerous when applied upon this part of the body than when used on the scalp, as in hair tonic, etc. If something must be done, the afflicted one may try bathing the parts with a solution of tannin and alcohol—ten per cent of tannin being the quantity used—and following with a light massage and cold water. This method may in time take away the superfluous flesh and will at any rate be harmless.

CHAPTER XXII.

THE MOUTH AND TEETH.

The woman who is fortunate enough to possess a beautiful mouth, of medium size, with an upper lip bowed, and moderately thin underlip, both fresh in coloring, can never be altogether unattractive. If in addition to this important feature she owns a set of sound, white teeth, she is indeed to be congratulated, for, with two such aids, she may hope to make much of herself. Complexions may be beautified and hair may be transformed, but a mouth is impossible to remake, unless surgery can be employed, and even then the small scars resulting will not assist in making matters any better.

So few people can be said to possess the perfect mouth, it may be well to consider the best means of treating the imperfections commonly seen, and in order to do this it will be necessary to understand the requisites necessary for the normal condition of the ordinary mouth.

The lips are two horizontal, flexible folds, surrounding the opening of the mouth, and on this margin the skin passes into the mucous membrane. The red portion of the lips, though really belonging to this mucous membrane, also partake of the nature of the skin. The coloring should be fresh, with a decided, though dry, gloss. The beauty of the lips depends not only upon the coloring and outline of the margin, but also on the symmetrical distribution of the tissue and the peculiar bright gloss of the red portion.

The cosmetic defects most frequently found are those of color, shape and condition of the epidermis. The lips may be too thick, or too thin, too much bowed, or too long and

straight. Aside from the application of coloring, cleverly simulating the desired curves, little can be done to remedy defects in form, though it has been said that to some extent the conditions may be improved. For instance, bathing the lips with tannin will somewhat reduce the size, while thin, drawn-in lips are declared to be improved by the application of irritants. The use of coloring as mentioned will not be possible in daylight, but can be used for stage purposes alone, and in this way may entirely change the expression of the face.

Colorless lips, when caused by ill health, are usually remedied only by general improvement, and in case of wasting disease, of great severity, nothing but the paint-pot can remedy the condition.

The cosmetic error most commonly seen is that of chapping of the lips. In some cases the epithelium seems to peel off without cause, at any time of the year. In others, this trouble is caused by the use of sharp spices, cheap cosmetics, and often by poisoning from colored veils. In all severe cases the lips are pale and covered with scales, or red and surmounted by brownish crusts. Deep incisions, either in the center or at the corners of the mouth bleed readily on pressure. This trouble, if neglected, may become chronic, leaving the mouth in such a distorted condition that it is almost as disagreeable to behold as it is painful to possess. Taken in time, it will often yield to treatment, by applying the proper ointments and avoiding the use of irritants. Many people, in an endeavor to remedy matters, have but increased the difficulty by using pure glycerine, instead of an oil, and in this way simply intensified the irritation.

If the applications of soothing salves are not efficacious, and the incisions persist in becoming deeper, it may be necessary to cauterize the portions before destroying them

entirely. This rigorous process may be followed by bland substances with good results. For ordinary purposes this salve will be found efficacious:

Lanolin	1 5
Almond oil	2 5
Spermaceti	2 5
White wax	1 5
Carbolic acid	$\frac{1}{2}$ 5

Melt the oils together, and add the acid when the mixture has cooled. Apply whenever necessary. In addition to the use of the salves, certain precautions should be observed. For instance, the lips must not be moistened while out in the air. The practice of biting them must not be allowed, and, most important, no veil should be worn that will draw across or touch the lips in any way. By observing these rules much trouble may be easily avoided.

The treatment of the gums must also occupy some attention, as no mouth can be considered perfect if the gums appear pallid and unhealthy. In reality, they are simply the mucous membrane surrounding the teeth. When in perfect health they are firm, of regular contour, with pyramids not too prominent, and of a healthy red. The cosmetic defects of the gums do not depend so much on general diseases and are more easily treated as connected with the teeth. The proper attention to one is generally sufficient to insure a good condition in the other. When, in use of the toothbrush, the gums bleed easily, there is, of course, an indication of loosening and inflammation that will necessitate the use of a flat toothbrush instead of a narrow one, and the brushing of the gums themselves, as well as the teeth. A mouth wash is of benefit in these cases and may be applied either with a brush or by means of a cotton swab. It may be made of these ingredients:

Listerine	1	℥
Alum sol.	$\frac{1}{2}$	℥
Myrrh	$\frac{1}{2}$	℥
Water	3	℥

Cases of receding gums are more difficult to treat, as the trouble is not only constitutional but local. The wash that may be used to good advantage is best made by mixing together—

Lime water	2	℥
Myrrh	1	℥
Bals. Peru	1	℥
Milk magnesia	6	℥

This wash may be used many times during the day, and in addition the service of the dentist should be employed.

Perfect teeth are said to be nearly as rare as perfect gems. This statement may well bring a smile of pleasure to the lips of the woman who possesses the requisite number in absolutely good condition. The cosmetic errors of the teeth are now so well cared for by specialists who have made the simulation of good ones a study, that nearly every woman may purchase what Nature has denied her, if she wishes to do so. Unsightly cavities are cleansed and built up with porcelain so nearly matching the teeth that it is impossible to tell where it begins, or ends. Or, if the teeth are really hopeless, the greater part will be cut away and a new portion made that will fit on the old roots and extend into the gums, in such a manner that detection is practically impossible.

The incrustations that appear in the form of a yellowish deposit should be removed as soon as they appear, as otherwise the enamel will be injured, and the teeth thus be made to decay. There are many forms of these deposits, and of course the soft ones may be kept away by the use of a

toothbrush and a good dentifrice, but the hard variety will need the attention of the dentist. If so situated that his services cannot be commanded, much may be done by very careful work with the finest of pumice stone mixed with powdered charcoal and applied by means of a small stick and a bit of cotton. This work must be very cautiously done.

Absolutely clean teeth will not decay, but as it is impossible to reach all the tiny cavities and thoroughly cleanse them, constant work is necessary in order to prevent the tiny particles of food from accumulating in the crevices. The use of a poor dentifrice is thus responsible for much trouble, and care must be taken to secure one that is fully adequate to the task of cleansing the crevices as well as the surface. A dentifrice that may be easily prepared and will be as effective as any, may be made of these ingredients:

Orris root powder.....	4 $\frac{3}{4}$
Precipitated chalk	8 $\frac{3}{4}$
White castile soap	4 $\frac{3}{4}$
Oil sassafras	40 drops
Oil bay	80 drops
Honey enough to form paste.	

Or, if a liquid dentifrice is preferred, there may be a demand for this recipe, as it cleanses the teeth nicely and will not injure the enamel:

Quillaja, coarse powder	1 $\frac{1}{2}$ $\frac{3}{4}$
Cochineal powder	15 gr
Glycerine	3 $\frac{3}{4}$
Oil of wintergreen	25 drops
Alcohol	10 $\frac{3}{4}$
Peppermint water to make.....	32 $\frac{3}{4}$

For many purposes a wash such as described is most excellent, as the alcohol penetrates into crevices and assists greatly in preventing any process of decay. It has been noticed that brandy drinkers usually possess fine teeth, as the alcohol acts as a cleansing and disinfecting agent.

When properly brushed, few teeth will require much attention from the dentist, unless there is some process of crumbling going on, that is due to insufficient bone-making material in the body. It is quite surprising to note in this connection that even when people are desirous of saving their teeth and preventing decay, few of them actually know how to use a toothbrush.

A hard brush is usually indicated in cases where the gums are normal. Even when the gums bleed, and are tender, this tendency may be overcome by the use of a brush of this description. Before using a new brush it should be well washed with soap and water and then allowed to stand in a solution of boracic acid for at least one hour. Then the powder should be applied on the brush, and the teeth cleansed by drawing it vertically from above downward, and from below, upward. The next process consists in brushing them horizontally and finally the upper and under surfaces should be cleansed. If the teeth are extremely brittle, the process may be finished by rinsing the mouth out with lime water. In any event it is well to use a mouth wash from time to time, employing either listerine or some thing of that nature for the purpose.

Discolorations may be removed by scrubbing the surface of the teeth with bits of cotton, soaked in pyrozone and water, say a twenty-five per cent solution and then rinsing the mouth out with clear water. A yellow appearance is common to some teeth, while in others it is induced by the use of dentifrices containing a great deal of soap. It is never wise to employ the bleaching fluid too frequently, as in time it might injure the enamel.

The disagreeable odor from the mouth, that is not only embarrassing but disgusting as well, may arise from the teeth or from numerous other causes. When from the

teeth, the filling of the cavities and constant use of a good dentifrice will be sufficient to banish it. If, from the tonsils or a catarrhal condition, the use of pyrozone as a gargle will be met with great success. If the trouble arises from a disordered stomach, of course, the cure will consist in remedying the condition at fault. A mild solution of boracic acid, made by adding enough of this substance to water to make a ten per cent solution, will make a very good liquid for use in this manner. It should be used, not once, but many times a day, and if necessary may be followed by these pastilles for perfuming the breath. Of course, these are only temporary remedies, to be used while the real cause is undergoing some process of treatment. No woman of any refinement can ever feel resigned to such a condition if there is any aid for it. The pastilles may be made after this recipe:

Chlorate of lime	7 gr
Vanilla sugar	3 $\frac{5}{8}$
Gum arabic	5 $\frac{5}{8}$

Mix with warm water to a stiff paste, roll and cut into lozenges. These pastilles will neutralize the acidity of the stomach, and will arrest decay of the teeth, in this way assisting to make the breath endurable, until further measures can be taken.

Finally, the following remedy for toothache will be of benefit to those who are subject to it, and it should be kept on hand, as it requires some time to prepare. It is best used by applying it to a bit of cotton, and then inserting the cotton in or near the aching tooth.

Camphor	2 $\frac{5}{8}$
Oil cajuput	4 $\frac{5}{8}$
Chloroform	5 $\frac{5}{8}$
Oil of clove	2 $\frac{5}{8}$

Mix and dissolve by agitation, and keep tightly corked, until needed. Heat may also be employed to advantage, by applying the hot water bottle to the side of the face most affected. The use of the remedy given, in connection with heat is rarely unsuccessful.

CHAPTER XXIII.

THE CARE OF THE FEET.

To be really comfortable and happy, every woman should know just how to keep her feet in good condition. If she does not, nothing is more certain than the fact that she will spend a certain number of days each year in an extremely remorseful frame of mind, unable to walk with any degree of ease on account of aching and tender pedal extremities.

The most frequent cause of trouble with the feet is simply neglect. Of course, all civilized people do take care of the body and incidentally the feet by bathing at frequent intervals, but not one person in ten will take the trouble to care for them intelligently and thus prevent trouble, instead of going to much labor and expense curing it. When one considers the number of absolutely unhygienic shoes placed upon the market, made of materials that are bound to cause more or less difficulty, with heels so absurdly high that not only the feet but also various organs of the body must suffer when they are used, there is really not much occasion for sympathy with people who suffer because they willfully place themselves in a position to bring on these afflictions.

One of the first requisites for good feet is found in the wearing of good shoes, and by this is meant well-fitting shoes that will support the instep and heel without pressing the toes unduly. The sole should be moderately thick and the heel low, while the leather should not be of either patent kid or any other highly glazed variety, for anything of this kind prevents ventilation and induces undue perspiration, making the feet tender and painful.

The hosiery, too, should be well considered, and if possible, all colored hose should be procured with white feet. The skins of some people are so sensitive that the wearing of even the most expensive colored hosiery invariably results in the appearance of eruptions like water blisters and terminating in a condition resembling eczema. Besides procuring the hose of this description care should be taken to change the stockings at least every other day, and if it can be arranged every day. Fine cotton will be found the best hose for all occasions, as either lisle or silk are apt to irritate the skin in time, while in addition to the irritation the silken hose wear out so rapidly that few people care to incur the expense.

The care of the feet consists in bathing them at least once a day, preferably at night in lukewarm water and soap, using the wash cloth carefully to cleanse the space between the toes, and finishing the process by powdering the surface well with a mixture of boracic acid and talcum.

If the flesh feels at all painful and the feet are swollen, immediate steps should be taken to cure this condition and, after bathing them, the following tonic should be applied :

Alcohol	6	ENCHANCING
Tannic acid	1	
Alum	$\frac{1}{2}$	
Witch Hazel	2	

If the swelling is extremely marked it will be well to apply bandages soaked in the tonic and allow them to remain over night. Before dressing in the morning the feet may be sponged off with cold water, and both the stockings and shoes should be dusted with the boracic acid and talcum mixture.

If the joints become painful and the feet ache, the tonic may be applied as usual and the feet massaged. Of course,

this is best done by a professional, but even an amateur can do wonders in the way of relieving this condition by supporting the foot with one hand while the other rubs from the instep down to each toe and in a gently circular motion the affected joints.

The following mixture may then be applied to them and the remainder of the surface dusted over with powder.

FOR PAINFUL JOINTS.

Guaiacol	1 $\frac{3}{5}$
Collodion	1 $\frac{3}{5}$

Shake well and keep in a tightly corked bottle.

The cream for massaging may be either the Creme Celeste or any other good cream, as it is simply to aid the fingers in manipulating the flesh.

Corns may be removed and kept in most excellent subjection by adopting the following plan. Before attempting to touch them the feet should be well soaked in very warm water. After removing them the callous portions should be peeled off carefully, taking care not to use a sharp knife that will cut the skin in any way. As soon as all of the portion that will come away easily has been used, an application of this remedy may be made.

CORN CURE.

Collodion	6 $\frac{3}{5}$
Guaiacol	1 $\frac{3}{5}$
Canna. Indica.	$\frac{1}{2}$ $\frac{3}{5}$
Sal. acid	1 $\frac{3}{5}$
Acetic acid	$\frac{1}{2}$ $\frac{3}{5}$

Add the liquid ingredient and shake well and then add the salicylic acid and shake well until dissolved. Keep tightly corked and apply with a bit of cotton wrapped around a slender piece of wood. If the mixture becomes dry it may be made liquid again by adding ether to it. This

remedy is most excellent for removing the pain speedily and will, when properly used, be wonderfully efficacious as a cure. Each night for four nights the process should be continued as described, and each peeling off of the callous portions should be performed with the knife that is not too sharp.

At the end of that time the surface should be smooth and free from any evidence of a corn. If it is not the process may be continued until the corn has disappeared. An occasional application from time to time will be all that is necessary.

Before using the knife it should be sterilized as directed in the chapter on this subject, and in case the flesh is injured or cut a solution of boracic acid should be used immediately pouring it directly on the wound and applying a small bandage. In the treatment of soft corns, the same rule may be adopted, being careful, however, not to attempt to do anything excepting wash out and cleanse them if they are festered. For this purpose peroxide of hydrogen will be excellent, followed by rinsing with boracic acid solution, and the placing of a dry bit of cotton between the toes to prevent the accumulation of moisture.

Ingrown nails are subjects for skilled specialists, and too much stress cannot be placed upon the danger of a cut to flesh in this inflamed condition. An old remedy and one that has been much cited may be tried by those who are obliged to depend upon home treatment. It consists in scraping the center of the nail as thin as possible by means of a bit of broken glass, while the corners of the nails are, of course, raised by means of small cotton pledgets.

If at any time there has been a cut of any kind or if the foot has been injured and becomes swollen and angry in appearance the wet bandage of a saturated solution of bo-

racic acid should be used until a physician can be consulted. It is never wise to neglect such injuries, as many of the most fatal cases of blood poisoning have come from cuts made while attempting to remove corns. It is for this reason that no cutting should be done, and instead the use of the peeling process insisted upon wherever it is possible so to do, the use of a strong acid for eating away corns should be forbidden, as much of the surrounding flesh is involved, and the danger is too great to pay for the small chance of relief.

The care and cure of corns is not difficult if but sufficient patience is practiced, but there can be no neglect, for if there is the trouble will soon be as disagreeable as ever, and the pain even more intense as time goes on.

Feet that perspire too freely can usually be managed by bathing each night in warm water, to which a few drops of formalin have been added, and in the morning dusting the shoes with the powder made as follows:

Salicylic acid	1	℥ ℥ ℥ ℥
Alum	1/2	
Boracic acid	1/2	
Starch	2	

If this is not effective enough more salicylic acid may replace a portion of the starch. Ordinarily, however, it will be found all that is required. In the use of any dusting powder absolute caution is necessary in removing the powder between the toes, otherwise the irritation caused by constant rubbing will cause an inflammation and possibly the portion will fester. The bathing each evening, when properly done will prevent any such complication.

Chilblains may be effectively treated by painting them with pure guaiacol, or the mixture of guaiacol and collodion recommended for inflamed joints. To produce the best effects this preparation should be applied not once, but several times a day and again at night.

CHAPTER XXIV.

CARE OF THE HAIR.

The proper treatment of the hair must also include a knowledge of the best means of securing a healthful condition of the scalp, for hair may be compared to a plant whose growth depends largely upon the quality of the soil, the amount of air, sunlight and careful attention given it. Ordinarily the care of the hair is restricted to very infrequent shampoos taken more to insure comfort from the peculiar itching condition present when the scalp is neglected, than because of interest in the best manner of keeping the scalp and hair in good condition. People with fine hair almost invariably abuse it, and only begin to realize the necessity for treatment when it commences falling out or splitting at the ends or turning a peculiar shade from the application of strong tonics or poor shampoos.

The hair is a thread-like structure formed of tissue that is really a modification of the cuticle. It is divided into the point, the shaft and the root. The root of the hair swells out into a bulbous enlargement fitting into a small recess in the true skin called the follicle. Near the mouth of the follicle will be found the opening ducts of one or more oil glands, while at the bottom are found the papillæ similar to those on the skin and supplied with nervous fibrils. The shaft or stem of the hair is covered with fine scales which may even be felt by drawing the fingers over it from tip to base. The coloring matter is generally supposed to be situated in the medullary strand or pith found in the center of the hairs, while the weight and number of hairs to the square inch depends upon the color, thickness and length.

Upon the surface of a quarter of an inch Withof found of the black hair 147, brown 162 and blonde 182, thus showing that the black hair is the thickest and the blonde the thinnest.

Oken has observed that the hair formation is the connective link between vegetable and animal tissue, and states his opinions as follows: "The fur is the peripheral connection between the plant and the animal. The hair forms the summit of the vegetables. As the plant requires air and light, so, in the animal kingdom the hair appears where it is most exposed to these elements, namely, on the surface. It is not a little remarkable that those mammals which stand nearest the man, the anthropoid apes, are distinguished by their great development of the capillary system."

To the earnest student the words quoted have a deep significance, for they point to the proper course of treatment as nothing else can, and show plainly that the perfect human being should be under no need of stimulating tonics or treatments if the open crowned hats and physical culture work could be universally known. Any curative treatments should be extended not only to the scalp but also to the entire body, at least so far as giving advice as to diet, manner of exercise and any other point that may improve the general health.

The majority of scalp diseases could be avoided if more people could be made to realize the necessity for system in shampooing and caring for the scalp and hair. Many instances might be cited in which excessive falling of the hair has been checked in one or two treatments by the use of massage and electricity, and stimulating tonic. Unfortunately, however, the majority of people neglect the use of any of these measures until the loss of hair has been extremely great and the follicles so weakened by neglect of the scalp that it is impossible to do much, excepting to

preserve the tresses that are left. There are innumerable cases in which the falling of the hair commences in children of fifteen and continues year by year until as manhood or womanhood is reached the condition is truly mortifying. So much of this trouble is entirely unnecessary that it seems strange indeed to know how few people really have interest enough to acquire knowledge in the proper care of this most important attribute.

To begin with, few scalps are cleansed as they should be. The majority of people cleanse them frequently but not wisely, for in the desire to possess fluffy locks they employ all kinds of injurious substances that sooner or later destroy the vitality of the hair. Among the common recipes for this purpose may be mentioned the use of salts of tartar, strong ammonia water, soda, borax and other articles that are too numerous to mention. Sometimes a simple shampoo is used and the hair is rinsed with another mixture containing an acid. Nitric acid will, it is true, turn the hair yellow, but is so powerful that it can also eat holes in nearly every substance when used pure, while hydrochloric and sulphuric acid can actually dissolve the hair. Thus every strong alkali or acid used will in some way injure the tresses in such a manner that it will be nearly impossible to remedy the trouble.

Every scalp should be thoroughly cleansed at least as often as once in ten days, and if the hair is to be kept in good condition the process must be one that shall remove the dirt, dust and sebaceous secretions without extracting too much oil. The best shampoo is one not too strongly alkaline that can still leave the hair as it should be, and for this purpose there are several excellent recipes.

In Germany the use of bran water is extremely common and as it makes a good, though simple, shampoo some of the readers may enjoy trying it.

BRAN SHAMPOO.

Water	1	gal
Bran	1	qt
Ivory soap	$\frac{1}{2}$	bar

Boil the bran with the water for about an hour and then strain and add the soap shaved into small bits. Enough of this is used to make a good lather and the scalp is covered with it. Perhaps it may be well to explain that in shampooing few people really pay enough attention to the scalp. The best shampoo is given in this manner.

The hair is, of course, smoothly brushed and is separated strand by strand, while the shampoo mixture is poured upon the scalp. As soon as the surface is well covered the tips of the fingers (not the nails) may be employed to rub the fluid in well, examining from time to time to see that the friction is not too vigorous and also to see if the cleansing is proceeding well. As soon as the surface has been well manipulated the mixture should be washed off with warm water and some more of the mixture poured on. The second process is usually all that is necessary, and as this is finished the hair itself should be washed with the shampoo and the scalp well rinsed, using first very warm water, then cooler, rinsing in water of medium temperature at least twice and ending with water as cold as the patient can endure in order to stimulate the scalp as much as possible.

The locks may be dried by any of the usual methods, though when practical the use of the towels is best until the heaviest strands are free from moisture. Then an exposure to the rays of the sun will be all that is necessary and will be the most beneficial method. When this is not practical the use of dry heat is a rapid method and when not used at an extremely high temperature is not injurious.

Egg shampoos, while popular, do not seem to be the best

for all scalps. The following recipe is one much used by those who can secure good results.

EGG SHAMPOO.

Yolks of three eggs well beaten.
One pint of warm, soft water.
One ounce of spirits rosemary.

Beat well together and use as any shampoo by applying to the scalp. In this much care must be taken to rinse the scalp well.

For those who wish to employ a practical as well as extremely good recipe, the following will be found excellent. It not only cleanses the scalp but also leaves the hair in a fine condition, and is not particularly expensive.

SHAMPOO MIXTURE.

Green soap	4 $\frac{5}{8}$
Castile soap	4 $\frac{5}{8}$
Water dist.	1 qt
Alcohol	8 $\frac{5}{8}$

Boil the soaps in water until a thick mixture results, and then add the alcohol, and keep in a tightly corked bottle until ready for use. The mixture will, of course, be diluted with water when necessary, and this quantity will be sufficient for many shampoos.

If a tar soap is desired it may be made in the same manner, or by simply boiling it up with water until a shampoo of the desired consistency is obtained.

After the shampoo, while the scalp is still moist, a good tonic may be used to good advantage and should be rubbed in vigorously, unless the scalp is at all irritated. In this even the application of pure witch hazel will be found most soothing. In case the hairs are split the ends should be trimmed and enough clipped away to give an opportunity for a healthy growth.

If any one has been unfortunate enough to be afflicted by the presence of vermin, it is well to apply this ointment before shampooing:

Petroleum	5	3
Olive oil	2½	3
Bals. Peru	1	3

This ointment may be rubbed in well with a piece of white flannel and allowed to remain at least twelve hours, or if possible, twenty-four. At the end of this time not only the vermin are destroyed, but the ova are also made harmless. To be perfectly safe, it is well to repeat this dose the following day, and if the scalp is irritated apply a bland ointment. For removing the ova from the hair a dilute solution of acetic acid may be used very successfully, as it dissolves the gluey substance by which the "nits" are secured in place. Even if the head becomes completely infested, it is not necessary to cut the hair, as this treatment will be all that is necessary.

CHAPTER XXV.

TREATMENT OF SCALP AND HAIR.

There is an ever increasing demand for some agent that shall stop the falling of hair, and, although every one realizes that poor health, sedentary occupations and improper modes of living are very frequent causes, still there are numerous cases where the trouble is caused by lack of care and the consequent weakened condition of the tresses and the uncleanly scalp. The most important requisites for a really fine condition of both hair and scalp apart from the very necessary cleanliness are, ventilation, and the proper amount of friction. In many instances where delicate children have the trouble of scanty locks as well, the systematic care after weekly shampoos has done wonders. No matter whether the hair is extremely oily or exceptionally dry, long or short, the foundation of all good work is based on the adoption of certain sensible rules, and it may be confidently asserted that if more people would understand and practice these instructions there would be few cases of bald heads.

Massage of the scalp, when coupled with electric treatments, is one of the most effective remedies known for restoring the vitality to the locks and improving the circulation of the scalp. It is best given immediately after a shampoo, and if one does not care to have the hair appear oily, instead of moistening the fingers with almond oil, witch hazel may be employed. The hair should be parted in a straight line from the forehead to the back of the neck and the two first fingers of each hand employed to give a rotary motion to the scalp. The fingers are placed about

two inches apart, and the scalp is pressed firmly so that the hair will not pull while the treatment is progressing. This rotary motion commences invariably at the front of the head, and is carried toward the back, the partings being made at frequent intervals, so that the entire scalp may be manipulated, and enough witch hazel employed to thoroughly moisten the surface. After this work has been finished, the fingers of each hand may be spread out under the hair and the rotary motion again tried in this manner.

This treatment is always finished by the application of a good tonic well rubbed in, and it may be observed that a tonic so employed has a far better effect than when it is used without the preliminary treatment. The recipe given is highly praised and will be found most efficacious for the purpose.

STIMULATING TONIC.

Tincture of cantharides	2 ̄3
Fl. Ext. of jaborandi	1 ̄3
Glycerine	1 ̄3
Alcohol	2 ̄3
Cologne	1 ̄3
Water sufficient to make	10 ̄3
Bichl. mercury	2 gr

This mixture will need to be filtered several times before it is clear enough for use, and then it will be found extremely beneficial.

If very rapid results are desired, or where it is advisable to spend the time the electric treatment should follow the use of the tonic, and in any case should be used on every scalp at least once a week, as it stimulates so well, that benefit is sure to follow rapidly. For this purpose the Faradic current is most excellent, and the connections may be made as shown in Figure 15, using the brush for the work and



Figure 18.
Using the Hairbrush Electrode.

employing it for at least twenty minutes. If the wire bristles seem to be too sharp, and the patient complains of the strength of the current, the wrist electrode, as seen in Figure 14, may be used and the treatment given in this manner by allowing the current to pass through the fingers, and onto the scalp.

When loss of hair is caused by nervous trouble the use of electricity is of added value, as it acts as a sedative to the nerves as well as a stimulant to the scalp. Headaches, either nervous or neuralgic, are relieved speedily and thus in many instances the health is improved. When the hair is exceptionally oily and the scalp feels cold and looks white and lifeless, the galvanic current may be used to great benefit in this manner. A bit of cotton well saturated with a



Hairbrush Electrode.

stimulating tonic is placed in the handle connected to the positive pole and placed upon the scalp, while the negative electrode is held in the hand. The entire scalp is treated in this manner and the treatment is finished by giving the scalp massage as directed. Treatments for this peculiarity must be given at least twice a week and the work done at home should also be of a nature that will assist in this process. For instance, it is advisable to sponge the scalp at least twice a week with this mixture:

Alcohol	6 $\bar{3}$
Oil mace	2 $\bar{3}$

If it is impossible to obtain electric treatments and they are found to be necessary it will be advisable for patients to secure their own batteries with the brush attachment and thus be in a position to use the currents as often as they like.

In connection with this topic it may be well to mention the practice of clipping or singeing the hair. There has been for many years a difference of opinion on these points, and until recently few of the higher authorities have seen fit to give much attention to the discussion. Now it is decided that clipping is the best method, as burning takes away too much of the vitality. The split ends are so numerous in some cases that it seems almost impossible to find all of them, but if the hair is twisted in small strands and then roughed by moving the fingers from the tip toward the head, the small scissors can easily pass along and get the worst hairs, while subsequent treatments will be sufficient to keep them all well trimmed. This work should be done at least once every four weeks and does much to keep the hair in good condition. By following the hints given here, any head of hair may be kept in good condition and the majority of cases of falling of the tresses stopped.

CHAPTER XXVI.

THE TREATMENT OF DANDRUFF OR SCURF.

Dandruff has been called by a very eminent authority—"catarrh of the epidermis"—and as there are many varieties of catarrh so there are numerous complications of this very disagreeable and common scalp affection. At times it is a short-lived affair, at others, most persistent, and as it is always objectionable, the best manner of treatment should be one of interest to every one so afflicted.

The skin affected with dandruff is usually anemic and may also be either dry or humid. The itching sensation is sometimes moderate though frequently almost intolerable, while the tissue surrounding the patches of sebaceous matter is generally much reddened and in some instances becomes painful from the constant inflammation. This disease possesses many peculiar manifestations and may be found associated with other scalp affections. Ordinarily, however, the varieties enumerated are the most commonly seen.

A form met frequently is that in which greasy white or yellow scales of dry sebaceous matter form on the scalp and even fall from the surface onto the shoulder of the individual. The hair is in some instances matted together, in others, it becomes extremely oily, though in time it generally becomes dry and lusterless and will eventually fall from the follicles. If the destructive process still continues unchecked the follicles themselves become atrophied and baldness results, leaving the scalp in the dry shiny condition familiar to all who have been at all observant. The small reddish patches found on scalps affected with dandruff are almost invariably caused by the scratching from the finger

nails and in the inflammation constantly present in these sections makes the treatment of the dandruff much more difficult, as there is danger of producing an extensive irritation.

Another variety of dandruff consists of a fine powder-like deposit that seems hardly fastened to the scalp, it is so easily detached, though extremely plentiful. This kind is usually associated with extreme dryness of the skin and even seems inclined to invade portions of the face as well. Still another and one that is fortunately not so common, is found in the appearance of thick scales of a yellowish-gray substance that also appears on the face if left unchecked. In connection with these scalp affections is found another condition that is extremely trying, in which an oily fluid is poured out both on the body and scalp. The ducts of the sebaceous follicles in this condition are plugged with comedones, and the surface of the skin is usually cold to the touch, showing the necessity for a treatment that shall improve the circulation as well as to restore the functions of the glands.

The treatment of these peculiar conditions must naturally be something that shall tend to prevent abnormal collections of fatty material upon the skin, remove the crusts of dandruff without undue irritation and improve the condition of the affected parts. These treatments when successful mean the expenditure of much time and thought, and the process is one most interesting to the earnest student. In all of this work there must exist a unanimity of purpose between the patient and the masseuse that will tend to most rapid results.

In severe cases of dandruff the removal of the crusts will frequently seem to increase the loss of hair, as impoverished by the course of the disease, and with weakened

follicles, a complete cleansing such as will be necessary will sometimes cause a loss of hair so great that the patient will fear baldness. This loss is absolutely unavoidable and even if the treatment is not commenced will begin sooner or later and the baldness will really be a permanent affliction. If, however, the dandruff is removed as indicated, the scalp massaged and treated, and the follicles strengthened, the hair will be encouraged to new growth, and by care, future trouble may be avoided.

The use of a fine comb or any kind of a metallic affair for removing dandruff is not only unnecessary but injurious, as it fails to remove the crusts while it invariably succeeds in irritating the scalp and causing more difficulty. For the purpose, therefore, nothing is better than the application of some bland ointment or oil, such as olive oil, almond oil, lard or any other substance that can thoroughly penetrate the crust. To be efficacious, the oil should be applied several times during the day, and again at night, using also some kind of a head covering to still further aid the work. A most excellent mixture for this purpose may be easily made by using these ingredients.

SCALP CLEANSER.

Lanoline	1 $\frac{3}{5}$
Carbolic acid	$\frac{1}{2}$ $\frac{3}{5}$
Witch Hazel	4 $\frac{3}{5}$
Almond oil	4 $\frac{3}{5}$

Melt the lanoline and almond oil together and then while still warm pour in the witch hazel, adding the carbolic acid when the mixture is nearly cool.

After the scalp has been soaked with this mixture and the crusts seem to be thoroughly loosened, the oil and crusts may be removed by applying the simple shampoo made by this method.

SIMPLE SHAMPOO.

Green soap	2	$\frac{2}{3}$
Alcohol	2	$\frac{2}{3}$
Rosemary Tinct.	$\frac{1}{2}$	$\frac{2}{3}$

Dissolve the green soap in the alcohol and add the tincture of rosemary and pour enough on the scalp to cover it, rubbing and applying enough water to make a good lather. It may be necessary to apply this shampoo several times in order to thoroughly cleanse the scalp of the oil and dandruff. After it is cleaned it may be examined, and if it appears reddened and irritated, the following ointment may be rubbed in carefully:

BLAND OINTMENT.

Almond oil	5	$\frac{2}{3}$
Bals. Peru	1	$\frac{2}{3}$
Spermaceti	1	$\frac{2}{3}$

In very severe cases, although this treatment seems wonderfully successful, the end of the second day will find a fresh deposit of the plates of dandruff, and it will be necessary to repeat the operation described for perhaps six or seven times at intervals of every three or four days until the tendency has been cured. As soon as the scalp can be cleaned without appearing at all irritated, a stimulating tonic may be used, and for this purpose nothing is better than this plan.

Immediately after the shampoo apply to the scalp pure witch hazel and rub it well with the tips of the fingers. Repeat this process again at night and the second or third day use this tonic:

Alcohol	2	$\frac{2}{3}$
Tinct. capsicum	1	$\frac{2}{3}$
Glycerine	1	$\frac{2}{3}$
Oil eucalyptus	1	$\frac{2}{3}$
Rose water	6	$\frac{2}{3}$

Of course, in instances where the first cleansing has been all that is necessary this tonic may be used immediately or perhaps, better still, after the first day, using witch hazel first as described.

The cases where the oily secretions occur are treated in exactly the same manner in the matter of cleaning, as the scalp will need to be well soaked in order to free the scalp from the fatty material. The tonic used will, however, be different than the other, and may be applied immediately after the shampoo. It is made thus:

TONIC FOR OILY SCALP.

Quinine sulphate	20 gr
Bay rum	4 5
Tinct. cantharides	1 5
Tinct. capsicum	1 5
Distilled water	8 5

In addition to this tonic treatment instructions should be given to the patient to bathe frequently, taking at least three warm baths a week, and if possible finishing each one with a thorough rubbing with salt.

One of the greatest causes for discontent in the work described here is not so much the failure to remove the dandruff, for the method described will positively do that, but in impressing upon people that the treatment must be continued until the scalp is in an absolutely healthful condition. When the loss of hair has been extremely great and the condition has been found to be complicated with eczema, even longer periods are required. Even when no complication exists and the loss of hair has been marked, it is often impossible to do much excepting to prevent further loss, for if the follicles are dead no new hair will appear in these portions.

Those who are possessed of that very desirable requisite

persistence, will positively succeed in curing the most obstinate cases of dandruff, and the competent masseuse should have no difficulty in impressing upon her patients the necessity for application. After the condition has been cured shampoos should be taken at least every ten days, and if possible one treatment a week for scalp massage in connection with electrical applications. Of course, the proper amount of rubbing will be done at home, and the scalp and hair should be thus kept in extremely good condition. In any and every case, the applications of oil first, are positively necessary, and must be made frequently, as directed, if the results are to be good.

CHAPTER XXVII.

HOW TO DYE AND BLEACH THE HAIR.

The universal desire to conceal or disguise the first unwelcome heralds of age—gray hairs—is so openly acknowledged that even those who disapprove of the practice of using dyes, still admit the longing to be almost a natural one. It may be of interest to the ambitious to learn that the oldest prescription on record is for a hair dye, and is credited to no less a person than Shesch, the mother-in-law of the first king of Egypt. Whether Madame Shesch intended this for her daughter Teta or wished to preserve her own appearance no one seems to know, but as the records state that the dye was hers we may take it for granted that she also made use of it.

Why the hair turns gray has never been satisfactorily decided. Some learned men declare that the blanching comes from the disappearance of the pigment cells. Others have by examination found the pigment as abundant as ever, but the corticle substance so dense that the color does not show through. There is no doubt that nervous strain, illness and heredity as well as advancing years may be cited as influences in this matter, and as in so many instances the growth of hair is as abundant as ever there can therefore be no question as to the healthful condition of the scalp. Whatever may be the cause there has as yet been discovered no cure, so the man or woman who wishes to hide from associates has no choice but in the application of a dye. In many instances this process is a necessity, as the appearance of gray hair would mean dismissal from lucrative positions, so in considering ways and means it is well to remember this fact.

There is an impression that hair may be colored permanently, but this is erroneous, for nothing can be dyed but the free portion outside of the follicle. Hence the process must be repeated from time to time, as the hair near the scalp will grow out a natural color, while constant brushing and washing will naturally take off part of the stain. The requisites for a good dye are not easy to fulfill, for every one demands that the mixture shall be easy to apply, of a natural appearance and durable. It is almost impossible to find a dye made by an amateur that will fill these requirements, though a few of the manufactured articles will positively do so. However, as people love to dabble in the fascinating art of making strange mixtures some of the simple recipes will follow.

The vegetable and organic dyes are usually harmless, next to these come iron and permanganate of potassium, then copper, bismuth and bichromate of potassium; next peroxide of hydrogen, silver and finally lead. The last two, of course, are generally recognized as used, though not by careful workers. Fresh walnut hulls are much used, and this method is really harmless. Henna is much employed to stain the hair red and is so effective that even black hair will yield to its influence. By mixing henna with indigo a shade of brown is made and by using the indigo after the hair has been stained with the henna a very beautiful black is possible.

The process is very simple. First comes a shampoo that must remove all the oil from the hair. Then with great care single strands are smeared with a paste made by mixing henna with warm water. The hair is then left according to the shade desired. If it is to be red and the hair is naturally dark, at least two hours will be necessary. Light hair will not take longer than an hour.

If the color is to be black it may be treated again with a paste made in the same manner with indigo powder and water. During this process the hair becomes a greenish black, later turning into a fine black that is very permanent. This process is even said to be beneficial, as far as increasing the growth of the hair is concerned, and in Turkey the manes and tails of horses are dyed red by means of henna. If one wishes to use the two ingredients at the same time the following formula may be of use, as it is said that by the application of this paste the hair may be dyed any shade from light to dark chestnut brown:

Henna	1 ½
Indigo	3 ½
Water	4 ½

The hand of an expert is required in this art, and in the use of henna it must be remembered that after the first dyeing unless the process is continued the most incredible shades appear, green, violet, and a queer copper color, making the appearance so weird that it is impossible to be seen in public places, until the color has worn off.

For bleaching the hair the agent most popular is peroxide of hydrogen, and if properly used it may at least be said to be harmless, though the color produced is never at all natural and the constant touching up required becomes most monotonous. The application of the peroxide is most simple, and is easily made by the use of a small brush. The hair is first washed carefully and the peroxide poured into a saucer and the mixture applied. One application produces a great change and more may be made as necessary. Ammonia is added in some instances, but it simply hastens the process and cannot do good while it does much harm by drying the locks. After the hair is thoroughly bleached, it needs constant watching to keep it in presentable condition.

It must remain as light as it is always, unless it is allowed to grow out the natural color again, or unless it is dyed. After it is dyed it is impossible to rebleach it without causing the most disagreeable complications.

The use of peroxide to lighten or brighten auburn hair is harmless and effective, and it may be used to advantage by using an equal quantity of water and applying it to the hair after a shampoo, then fanning until it is dry. Muddy, brown hair may also be brightened in the same way without injuring it.

A good dye for gray hair or rather one that will restore the natural color is hard to describe. The following recipe is said to be extremely effective, and at any rate has the advantage of being less harmful than most of the dyes.

HAIR DYE.

Southern wood	1½ lb
Olive oil	1 qt
Port wine	1 pt

Bruise the wood and boil it in the olive oil and strain through a cloth. Get fresh quantities of the wood and repeat the operation twice. Then add the port wine and allow it to stand several days before using. This is too oily to suit most people so the next recipe will be more popular. It is said to have been advocated by Lola Montez.

INSTANTANEOUS HAIR DYE.

Gallic acid	10 gr
Tinct. sesquichloride or iron	1 $\frac{1}{2}$ oz
Acetic acid	1 $\frac{1}{2}$ oz

Dissolve the gallic acid in the sesquichloride and add the acetic acid, wash the hair and apply dye when it is thoroughly dry.

Other dyes extremely popular contain excess of lead,

and as there are numerous cases on record where dyes of this description have caused death or perhaps that affliction even worse than death, paralysis, it is well to be careful in applying any mixture to the scalp unless one has some knowledge of its properties. The dye safest to use is that not applied to the scalp but to the hair, and which may be used as often as required. The best dyes as a rule come in two portions marked either A and B or 1 and 2, and are used in the following manner:

After the hair has been thoroughly cleansed with soap and water and then dried the solution marked A is applied with a small brush, drawing it from the roots to the tips and saturating the hair well. It is then allowed to dry, and as soon as possible the second solution applied, using a different brush for the process. The hair is again dried, if possible in the sun, and in twenty-four hours the superfluous dye is washed off with warm water. Most of the trouble coming from the use of dyes may be traced to this last point. Many people imagine that it is useless to wash off the dye the next day and allow it to remain, thus causing much injury to the hair. In order to produce just the desired shade a most accurate knowledge of chemistry is necessary, hence the difficulty in preparing any of the dyes that are supposed to change the hair from one shade to any other.

The woman who desires to obtain the best results should get the most reliable preparation, and if possible have its action explained to her. If she cannot afford to have a competent hair dresser apply the dye she should follow the directions to the letter and the results may be very pleasing. The shampoo should be made imperative, as it is almost impossible to apply any dye and have it act properly unless the hair is washed. Another point of importance is the

kind of shampoo used. One that will not produce complications by inducing peculiar combinations of chemicals is, of course, necessary, and hence it is well always to use a mixture, the ingredients of which are known. For that reason the shampoo mixture mentioned in a previous chapter will be the best for general use.

In using any dye the skin of the face should not be touched by the liquid, and the dress should be protected by a rubber cloth, while the hands will, of course, be encased in rubber gloves. The bottles containing the staining mixtures should be placed on metallic trays or on something that cannot be discolored, and the utmost care taken not to allow drops of the dye to be spattered on the clothing or carpet or anything that may be injured. A little experience very speedily shows the average woman that the art of dyeing the hair is one that deserves recognition as a most difficult and delicate process, unless there exists that natural adaptability that enables one to know intuitively just what to do and how to do it.

Finally, although there are given so many precautions and warnings, it is not fair to frighten those who feel the necessity of using dyes, for there are thousands of people who have used them successfully for years without any injury to either the scalp or hair. The process is a peculiar one, and it must be done with the greatest of attention to minute detail if it is to be pleasing. This performed, the results will be as desired.

CHAPTER XXVIII.

HOW TO GROW THIN.

The woman who carries in addition to the regulation number of burdens, that additional one—superfluous flesh—has indeed a right to demur.

For her, life can never be exceedingly comfortable. Every effort tires her. Changes in temperature may mean actual suffering, and physically she can never be at her best while this huge load of fat presses on all of the vital organs, shortening her breath, impeding the action of the heart and liver, and almost invariably producing some serious complication.

The accumulation of flesh usually commences about the age of twenty-eight, sometimes a little earlier or later, and though frequently found in people inclined to be physically indolent, there are exceptions to this rule, for the busy housewives are often quite monumental in appearance, though leading active lives. In such instances the food, and body exercises and baths will be found of the greatest importance in the process of reducing flesh.

In respect to this question, as in many others, the various authorities have met success in different ways, although they have all agreed upon the main items. There are many phases to be considered in this work before attempting it, and among the most important are those regarding the danger to the physical well-being by reducing so rapidly that the organs may be weakened. This rapid process is almost inevitably the result of taking strong drugs, and the thoughtful person will hardly care to consider such a course. Bathing, too, may be dangerous if the temperature of the

bath is high enough to cause increased heart action in one whose heart is already weakened, while exercising must be undertaken with caution and according to set rules, if it is to be of benefit.

After considering well the phases to be avoided, the student should first learn the theory of treatment, then follow it, and inevitably she will find herself wonderfully improved in health as well as greatly decreased in weight. Even with organic troubles, those who are too heavy may manage to become a great deal smaller, while ordinary, fat people can easily make themselves just what they desire to be if they will but persevere in the treatments indicated.

The cause of obesity is said to be a disturbance of cell activity. An over-use of carbo-hydrates tends to increase the fat greatly, while alcoholic stimulants or an excessive diet of fats and starches also aid in this work.

The effects of obesity may be seen in the sluggish condition of the circulation, torpid liver, weakened heart and kidneys and disinclination to exertion, both mental and physical. The vital capacity is also much less, and experiment has shown that for every kilo of weight above the average, there is a corresponding decrease of 37 c. c. in this respect.

In reducing the flesh the dietetic treatment is all-important, and should be carried out accordingly, with due regard to the necessity for systematic bathing and exercising as well. The best method is naturally that which not only reduces but also performs the work without weakening the patient. In some instances where there is anemia present with weakness of the heart, the treatment must be an invigorating one, and in all methods there should be exercised an effort to avoid measures that are too severe to be consistent with health.

Banting, Ebstein and Oertel are the most quoted authorities on this subject, and each plan has certain advantages, but none can be used in all cases. A strict avoidance of all the foods of a certain nature is apt also to impair the digestive properties, so in general practice it is well to limit the diet, but also to use as many articles as possible in strict moderation. For instance, the use of sweets may be supplied by saccharine, the starchy foods may be represented by the bread and the peas and beans allowed, thus making the diet a mixed one. The following list will be found sufficient for the majority of cases.

BREAKFAST.

One egg, either poached or boiled, one cup of coffee or tea sweetened with saccharine if necessary, toasted bread, wheat bread, or graham, 2 ounces fruits, such as oranges, grape fruit, or apples. (One only being allowed.)

Immediately after breakfast a two-mile walk should be taken if possible, if not, the use of the body exercises may be tried, paying especial attention to those calling for bending, such as I, II, III and IV. This work should consume at least fifteen minutes, and following the exercises the body should be sponged off with salt water.

Two hours after time of meal a glass of some mineral water should be taken, preferably Vichy one day, Kissingen the next.

NOON MEAL.

Soup, 3 ounces; fish, 3 ounces; roast or boiled beef, veal, game or poultry, 6 to 8 ounces; green vegetables, 2 ounces; bread, 1 ounce; fruit, 3 or 4 ounces; 4 to 5 ounces of any light wine. No liquid aside from this is to be taken with the meal.

Two hours after meal a glass of mineral water.

EVENING MEAL.

Caviar, $1\frac{1}{2}$ ounces; 1 to 2 soft-boiled eggs; beefsteak, fowl or game, 5 ounces; salad, 1 ounce; cheese, 1 dram; bread, 1 ounce; fruit, or water, 5 ounces.

Before retiring, a complete body bath in warm water may be taken and the entire body well scrubbed with soap and water, followed by a cold sponge, unless the action of the cold water is unendurable. Following the bath, the breathing exercises may be practiced, especially the last four, although all of them will be found excellent.

In twenty-four hours after the beginning of this program, weight will have been lost, and the decrease should be steady until the average weight has been reached, when the strict process can, of course, be stopped, and by attention to food and exercise the accumulation of flesh discouraged.

In connection with exercising and bathing, care must be taken to prevent the skin from becoming withered or flabby after this loss of flesh, and hence at least once a week a thorough massage of the body should be given, while massage of the face and neck should be an everyday affair, for this follow the directions given in chapters on massage.

In cases of nervous dyspepsia, the use of electricity has been most beneficial, and the current may be used over the spine, at back of head, and upon the diaphragm with most excellent results.

Bodily exercise is, of course, of much importance, and persistence means that where the flesh was, firm muscles will exist, and the creases and crevices so dangerous to beauty will not appear. For those who feel that the decrease in flesh endangers the appearance, the following lotion may be used with extremely good effect. It is best applied after the evening bath.

Rose water	8	3
Tinct. of benzoin	1	3
Milk of almonds	2	3
Sulphate of aluminum	$\frac{1}{2}$	3

Dissolve thoroughly and filter until clear. Keep in a dark bottle in a cool place and apply with a sponge daily.

The cold sponge is especially recommended after the ordinary warm bath, and even the most delicate may in time accustom themselves to this by commencing with the use of tepid water, and gradually adding the colder until the desired temperature has been reached. Salt may be added to the water with very good effect or the towels may be dipped in a saturated solution of salt allowed to dry and then used to scrub the body with. The effect of this friction is most beneficial.

The following table of weights is the one most generally accepted, and any great deviation from this either way should be corrected as being inconsistent with health. The normal woman should not vary more than two or three pounds from these figures. If she does, her only remedy is a strict observance of the rules given for the correction of this condition.

5 feet	1 inch	120 to 123 pounds
5 feet	2 inches	126 to 128 pounds
5 feet	3 inches	133 to 135 pounds
5 feet	4 inches	136 to 138 pounds
5 feet	5 inches	142 to 144 pounds
5 feet	6 inches	145 to 147 pounds
5 feet	7 inches	149 to 151 pounds
5 feet	8 inches	155 to 157 pounds
5 feet	9 inches	162 to 165 pounds
5 feet	10 inches	169 to 171 pounds
5 feet	11 inches	174 to 176 pounds
6 feet		178 to 182 pounds

CHAPTER XXIX.

HOW TO BECOME PLUMP.

The thin woman may glory in being willowy in her youth, but as in the early thirties she sees the deep creases and the tiny lines that appear with the evident determination of acquiring a permanent position, there also comes the desire to acquire a few pounds of flesh to assist in covering the too apparent bones.

All wasting diseases will produce this excessive leanness, but if there is no trouble of this kind to contend with, and no inherited tendency, much can be done toward correcting this condition. It is peculiar, to say the least, in studying the best measures for putting on flesh to find how many of the rules for taking it off must be observed.

Exercise in the open air is as important for one as for the other. The body exercises for development are always to be used, while those in breathing, found the very best basis for this treatment. Exercises especially beneficial in this respect are those in which the abdomen and chest are made to expand against pressure. Of course, in performing any of these movements care will be observed to carry none of them to excess, and to avoid becoming over-exhausted at any time.

Bathing may be used almost as extensively as in the case of superfluous flesh, with the difference that after the use of a very warm bath much time should be employed upon the massage of the body, using as much oil or skin food as the pores will absorb. After a bath of this kind much rest should be taken and a light lunch eaten before

dressing. For instance, a glass of milk and a roll or two, or poached eggs and cocoa or a glass of ale will be found excellent foods for this condition.

The bath, most beneficial for this purpose, is that obtained by pouring into the tub two quarts of bran, and allowing it to remain in the warm water for twenty minutes before entering. This bran may be used for rubbing the body by mixing it with castile soap, and after a vigorous friction, the body should remain in the water for at least twenty minutes, finishing with a thorough massage of the entire body.

Each day after luncheon, a rest should be taken and upon rising if there is any appetite for food, a cup of chocolate or glass of milk or tea with toast may be taken. Much sleep is extremely beneficial, as the majority of thin people are exceedingly active, and do not get the rest they require.

Many women have found the use of porter or ale to be most beneficial, but as the use of these stimulants is often attended by a desire for something of the kind constantly, it is well to use remedies less apt to be attended with bad after-effects. Any sour wine such as claret or Rhine, or the use of the many acid fruits, such as lemons, oranges, grape fruit or limes should be avoided.

When the one who is thin is also exceedingly nervous, sufficient rest must be made a positive law, with the use of electricity if her nerves seem entirely beyond control and a tonic of hypophosphites to assist in toning up the system. The following diet will be found the best in most conditions.

BREAKFAST.

Cup of tea or coffee with as much cream and milk as can possibly be employed. Any of the cereal foods, berries or fruit with sugar, baked potatoes and a lamb chop.

This menu will seem rather elaborate to many, as the "no breakfast" fad is widespread, and both corpulent and emaciated women have accustomed themselves to either nothing at all in the morning or one cup of coffee with perhaps a slice of unbuttered toast. All thin people should make an effort to make this morning meal a substantial one, as it does more to keep up the strength and prevent undue strain than any other meal in the day.

In the middle of the morning after exercise in the open air it is well again to take a light lunch and this may consist of toasted crackers with a glass of milk or eggnogg. After this lunch, of course, the ordinary occupations may be pursued as usual, and at noon the following menu will be found the best.

LUNCHEON.

Potatoes, any of the green vegetables, omelette, bread and butter and fruits, cold meats and milk, chocolate, or cocoa, or milk.

After lunch a rest of at least one-half hour should be taken, or if possible a long nap, followed by a lunch during the middle of the afternoon.

DINNER.

Any of the nourishing soups, fish of any kind, meats, such as rare, roast beef, chicken, sweets and fruits. Beer, porter, Burgundy or a little sweet Champagne may be taken.

After dinner a little light exercise should follow, and especial care should be used to avoid making the hours for retiring late. The warm bath, as described, can well be taken at night with the careful massage following and a glass of milk may be taken just before retiring for the night.

The diet in all cases will be found to be most important, and excesses should be guarded against. Although sweets

are fattening, too many are apt to cause emaciation, just as surely as the average use encourages corpulency. In nearly every case of extreme thinness, the patient is found to have a peculiar appetite. Rarely is there observed a healthful longing for food best suited to her condition. The desire may be for sweets or for sour fruits or pickles, but it is invariably for something that will injure the digestion.

Tendencies of this kind may be overcome by persistent effort and determination. If necessary, a good tonic may be employed to aid in the work. In any event, the determination to acquire a healthy appetite may be met with success, if sufficient interest is shown in the matter.

The matter of nerves must be especially considered in these instances, and if the subject is extremely irritable, allowing every small matter to disturb her, she must simply call a halt in her round of duties by weeding out every unnecessary task, and spending sufficient time to thoroughly cultivate that state of calm and repose necessary to peace of mind. The rest cure may be taken in the heart of the city as well as in the quiet of the country, for wherever there is sufficient will, there is bound to be success, and this may be easily proved by any one who will make the effort.

CHAPTER XXX.

PHYSIOLOGICAL DEVELOPMENT.

It is not alone for the benefit obtained in acquiring a graceful carriage, or in the symmetrical development of the body, that the proper system of exercising is advocated; but chiefly on account of the positive increase in both mental and physical capacity for sustained effort, obtained by those who have the will to adopt, and the perseverance to practice the movements best suited to their needs.

It cannot be denied that much harm has been done by the use of exercises too violent for those with weakened constitutions or any organic trouble of the heart. However, in teaching of the wonderful results to be obtained from this work, full emphasis has been placed upon the absolute necessity for caution, and in addition, only the exercises that may be attempted with perfect safety have been selected for lessons.

Exercise should not be relegated to young, but should be encouraged in the middle-aged and old people as a means of preventing fatty changes, and the process of degeneration peculiar to age, in which the blood vessels wither away and thus cause excessive tissue waste.

These processes may in a great measure be prevented by persistent and systematic effort to keep all of the muscles in working condition, as well as in maintaining a good circulation. In this manner the capillaries and blood vessels instead of contracting, may be kept at their greatest capacity, thus insuring sufficient activity.

The anecdote of the man who commenced lifting the calf from the time it was two days old, and thus proved

that when it became a huge animal he could still perform the same feat because his muscles had been trained and gradually adapted to the increased effort, is a very good illustration of what daily work will do for every one. If it could be kept up, or rather if it were continued as it should be, and proper vigor could be maintained, the man of sixty would be far more supple than the boy of sixteen.

One of the most prominent educators in this country, who was opposed to anything in the way of violent exercise, or indeed even to mild efforts, or anything else, that would take him away from his books, has recently been made the object of some very curious experiments in order to prove that a man of fifty-five could be trained in the greatest part of the work done by the college athletes. The educator had declared so vigorously that he could never be improved by this method of development that when a tempting wager was made he finally agreed to undergo training for six months, adopting the diet as well as the work lined out by the advocate of physiological development.

At the end of three months the stiff lines and awkward gait had been supplanted by an erect carriage and semblance of ease. Six months found him a different man, not only physically but also in regard to capacity for mental effort, a matter easily proved, as this new work did not interfere with the ordinary duties of life. At this time arrangements were made to prolong the training for one year, and then to his delight he found he could perform the following exercises with ease:

He could stand on a block eight inches high, and, reaching down, lay his hands on the floor, palms downward. He could lay his hands flat back on his wrists and easily slip his toes in his mouth. In addition to these proofs of sup-

pleness he could hold a cane horizontally, clasping each hand about it behind his back and then raise it above his head. A trial at raising the hands alone will soon convince any one how difficult it must have been to acquire the ability to do this last exercise.

Of course the results of this work were quite sufficient to make an ardent enthusiast of the educator, and as a consequence the athletic portion of the college boys soon found an ally who assisted them whenever possible.

Instances without number may be cited, showing that those who are in the habit of exercising habitually will not only live longer and happier lives, but will also enjoy comparative immunity from sickness and attacks of melancholia and will be decidedly prone to the comfortable condition in which neither the extreme of corpulency or emaciation will be experienced. Twenty minutes spent in this work each day will do wonders for any one who is earnest in the work within a year's time. The increased interest among women is already showing wonderful results in the finely proportioned types styled the American Girl.

Especial emphasis should be placed upon the benefits to be derived from this work by those who have passed middle age. There has been a feeling that all efforts of this kind were unavailing excepting during the earlier years, and as a consequence the interest has not been as great as it should be. No one is ever too old to be benefited to some degree by work carried on properly, and every person should be convinced of this fact. There are too many instances of activity among people who have passed the allotted threescore and ten to make one feel that there is anything like an age limit in these enlightened days.

Full breathing stands at the head of every list as most important as well as absolutely necessary to perfect health.

The room one sits in may be filled with fresh air, but unless it is taken into the body correctly by an effort that shall not only fill the lungs, but also exercise the entire abdominal region, breathing is not properly done. In all labored respiration, the abdominal muscles act by diminishing the abdominal cavity, and pushing the contents up against the diaphragm. The contraction of the diaphragm, by increasing the intra-abdominal pressure, favors the venous blood current in the abdomen toward the venacava inferior. Thus the act of breathing correctly and deeply is seen to have an immense influence in actively exercising the organs so vitally important if health is to be maintained.

Breathing should be done through the nostrils, because, as the current of air passes through the pharyngo-nasal cavity, it is rendered warm and moist, and the irritation of the mucous membranes of the air passages by the cold air is prevented. Small particles of soot or other foreign substances adhere to and become embedded in the mucous covering and are carried outward by the peculiar mechanism of the respiratory passages, and finally disagreeable odor and impurities of the air are detected by the sense of smell.

Oxygen, the great purifier, is present in large quantities in fresh air, combined with nitrogen and carbonic acid gas— CO_2 . Taken into the body by the means of respiration it revivifies the blood, assists in the construction of the new tissue as well as in the breaking down of old. Air once breathed has been deprived of a great part of its oxygen, and possesses a marked increase in CO_2 . Hence, in order to take in as much of the life-giving oxygen and as little of the inert CO_2 as possible, the same air should be breathed but once, thus making perfect ventilation a necessity in all apartments.

Fresh air is as necessary for the most robust as for the weakly, and the allowance of space necessary to secure sufficient air for each individual should always be considered in respect to the healthful condition of rooms. Ordinarily 800 cubic feet should be allowed for a healthy person, and 1,000 cubic feet for one who is sick. In addition to the allowance of air, care must be taken to insure the free admission of sunlight, in order to get rid of the organic matter that is constantly given off. A very good illustration of the fact that this organic matter given off by means of the breath is filled with numerous bacteria may be tried by breathing into a jar of distilled water, and then placing the vessel aside. In a very short time the water becomes fetid. Hence it will be seen that to insure perfect ventilation, as well as the best condition of an apartment, both sun and air are required.

In learning to breathe correctly the exercises should be taken in a room previously well ventilated or by an open window. Any muscular effort causes an increase in the CO_2 given out, so much more care must be exerted to keep the pure air in sufficient quantity to make the exercises beneficial. The good effects of correct breathing are remarkable. Chests expand, stomachs recede, cheeks show more color and eyes are brighter, while the general health is of course far better. The process of breathing should not be spasmodic, but natural, with a certain rhythm. Those who puff out their cheeks and go through numerous other facial contortions, such as gasping and gurgling, are harming themselves in more ways than one, and are doing absolutely no good. Care must be taken to learn the proper method, and then the results will be all that can be desired.

Rapid, violent breathing is to be avoided, as it may

produce serious injury to the pulmonary tissues. Shallow breathing is of no benefit whatever, and in this very important work every exercise should be performed with the mind absolutely concentrated upon the subject, as well as with a steady determination to go at the work with the intention of producing the effect desired. The time given to breathing may be increased from day to day. If exercises seem too difficult for the first trial they may be made easier until finally they can be accomplished with the utmost ease.

The busy woman, who feels every moment is precious, if properly dressed, may practice deep breathing as she walks to her daily occupation. With shoulders thrown back, head erect and hands at her side she may inhale slowly while she counts five, exhale while counting seven, and so on until the utmost capacity for the lungs has finally been reached. This, of course, means that her clothing must be worn so comfortably that the abdominal muscles may be used with every breath.

If the great distance precludes an attempt at walking, the breathing exercises may be practiced upon retiring at night, and in fact some of the most excellent are performed while in a recumbent position. During the day, if the head feels heavy and there is a sensation of weariness that makes the work drag, five minutes of deep breathing by the open window will send the blood bounding through the veins and so clear the brain that the capacity for accomplishing is almost doubled.

So enthusiastic are the advocates of correct breathing that it is said one of the foremost actresses attributes a great part of her success to her knowledge of this art. If tried beyond her strength by some strongly emotional art, or if feeling unequal to the work before her, she imme-

diately gets into the open air for long enough to practice inhaling and exhaling ten deep breaths, and returns feeling refreshed and invigorated.

It is frequently impossible for any person of ordinary environment to go through the long and vigorous courses prescribed by those who make a specialty of this work. Hence in giving the following exercises care has been taken to select those that will sufficiently exercise the vital organs as well as the muscles and yet will not be in any way injurious. Many excellent exercises will need to be omitted, simply because it is impossible for any one to do them without instruction. However, if these that are given are practiced as they should be there will be found little need of anything else. Every woman, no matter what her occupation, needs to learn and practice deep breathing. The following examples will suffice as illustrations of the most important portions of this work.

Exercise I. Assume a recumbent position by lying flat on the couch or floor and relaxing all of the muscles. Then inhale slowly through the nostrils, and as deliberately exhale. Place the hands lightly on the abdomen, and if the breath is taken correctly the abdominal muscles will become inflated first, then the chest. In order to make the work rhythmical commence by mentally counting five while inhaling, and seven while exhaling. Repeat five times, gradually adding to the count as the strength increases, and always being careful to perform the work methodically. This exercise is excellent for practice in inflating the lungs properly and may be practiced in bed before rising, thus commencing the day well.

Exercise II. Still in a recumbent position exhale fully, pressing lightly with both hands upon the abdomen. Inhale fully, resisting pressure, which should increase with

each time the exercise is performed. These two exercises will make the diaphragm strong and elastic, and the entire lung tissue will be expanded. Repeat this five times at first, increasing gradually.

Exercise III. Assume military position. In order to ascertain if this is properly done, stand with the body touching the wall, and if the back of head, shoulders, buttocks and heels touch, the attitude is correct. Then place



Figure I.



Figure II.

hands on side close to armpits, as illustrated in Figure I. and resist expansion of side muscles. Exhale with pressure still continued, and during the exercise proceed with mental counting, as directed in first exercise. Perform five times.

Exercise IV. Assume attitude as in Figure I, placing hands on upper part of chest and again inhale against the

pressure of the hands, exhale without the pressure. Continue the counting as before and use the same number of times.

Exercise V. Assume attitude seen in Figure II, and



Figure III.



Figure IV.

inhale while raising the hands straight out and up, exhale while coming back to original position. Continue counting as before. This work is excellent for raising the chest walls and for lengthening the waist.

Exercise VI. Assume the attitude of Figure II, and exhale while dropping the hands at the side, inhale while bringing them up to original position. Continue counting as before, and after the first or second trial exert a little pressure, bringing them up against this and relaxing as the arms go down.

Exercise VII. Assume position of Figure III, throwing the head back as far as possible, and interlacing the fingers back of the head. Fill the lungs to the utmost capacity, hold the breath, and then resist, and in spite of resistance pull the head downward, at the same time exhaling. This is rather violent and cannot be done successfully at first. In beginning, two trials will be sufficient, gradually arriving at five and never performing any more than this number of exercises at any lesson.

Exercise VIII. Assume position shown in Figure I.



Figure V.



Figure VI.

with hands at side, and exhale all of the air from the lungs. While holding them empty draw in the abdomen as much as possible, and then extend it forward to its greatest capacity. Do this as rapidly and as often as control over

respiration will permit. It will strengthen the stomach and will reduce superfluous flesh over abdomen as no other method can. This ends the exercises in breathing, and as these are positively the best to be obtained the student who

learns them correctly and practices them methodically will be positive of improvement.



Figure VII.

In practicing breathing, a feeling of dizziness is often experienced, and in some instances the action of the heart is greatly increased. In such an event, do not attempt to work until every uncomfortable sensation has departed, for it will not benefit. The average rate of inspiration is from ten to twelve seconds, with fifteen for exhalation. It is not necessary for the average person to de-

velop too greatly, so when this point is reached it may be as well to continue the work at about this rate. After a week or so of systematic effort the exercises may be performed with ease in a very short time, and the vital capacity will be found surprisingly increased.

CHAPTER XXXI.

BODY MOVEMENTS.

Fully one-half the ailments that perturb the feminine portion of the world could be avoided if women would but be persuaded to exercise properly. If, in addition, they would eat wisely, bathe systematically and rest when necessary the number of invalids would indeed be few.

Happily for the advocates of "healthful living," the proper system of exercising is usually a means to an end, and after the proper system of exercising has been taught, the pupils, in delight at the improvement in appearance and in capacity for work as well as enjoyment, are usually only too anxious to proceed in the path outlined. Thus the evolution of the best system may be insured.

The world of to-day is an exceedingly busy one. Nearly every one is engrossed in a mad endeavor to accomplish some purpose, and this object usually requires every spare moment of time. The lined brows, nervous, twitching eyes and pallid cheeks of these victims of modern progress point only too plainly to the price paid for the accomplishment. This condition is not limited to any particular class, for in every grade of society the number of overworked are to be found. The busy housewife, nervous society woman, tired clerk and overworked teacher acknowledge the need for rest and change, but fail to find leisure in which to make an effort toward improvement. As a consequence the number of interested workers in the realm of physiological development is correspondingly small, and some plan must be devised by which the work may be made possible for all classes.

In the preceding exercises the attention has been paid more particularly to the development of the lungs, improvement of circulation and exercise of abdominal muscles with a view to strengthening the diaphragm. These that follow will be particularly adapted to strengthening the muscles of the arms, legs and back, and will be excellent for producing a symmetrical development of the figure and a reduction of superfluous flesh.

Exercise I. Assume position of Figure II, and then bend from side to side, as illustrated in Figure IV, keeping the knees rigid and heels together. This exercise should be performed at least twenty times with arms outstretched as seen in illustration. Reduction of the hips will follow the use of this exercise, and also a lengthening of the waist line.

Exercise II. Assume military position, as illustrated in Figure I. Then stand with the feet apart and the toe of one slightly raised as the hands on one side slips down toward the knee while the other is kept under the arm. Alternate this work first on one side, then on the other, as the one hand comes up, the other must slide down, until this has been done twenty times. This is called "lifting the liver" and is excellent for curing constipation.

Exercise III. Assume positions shown in line drawings, A, B, C. First the military attitude as in A, placing hands on back of chair. Then raise on tiptoes, as shown in Figure B, and descend into a sitting position, as shown in Figure C. In this work, ascend on the toes as high as possible and descend as near the ground as can be, all of the time keeping the body erect and steady. A very good way to perform this work is by placing a book or some other object on the head and attempt to do the work in this manner. In this way the erect position will be maintained. Repeat until the muscles ache.

Exercise IV. Assume position of Figure D, raising the arms high over the head, bringing them forward in a sweep and touching the toes without bending the knees, as in Figure E. This will seem very difficult at first, but after a short time can be easily done.

Exercise V. Repeat same exercise, but twist the body to the side, and attempt to touch the heels instead of the toes. Repeat, first on the left side and then on the right. This is extremely difficult and may require too much exertion from some beginners, so should be attempted once at the first lesson and never done more than three times in succession.



Fig. A.



Fig. B.



Fig. C.



Fig. D.



Fig. E.

Exercise VI. While in bending position illustrated in Figure E, bring the hands against pressure, out at each side, and up as far as possible. Do this at least five times.

Exercise VII. Raise the hands above the head, as in Figure D. Turn the arms until the palms meet over the head, lower them with palms still upward, until on a level with the shoulders, and then drop them to sides. This exercise rests the heart and is best performed during the course of exercises rather than at the beginning or end.

Exercise VIII. Take attitude shown in Figure V, and bend with hands held above the head as far backward and as far forward as possible without changing position of hands or allowing the knees to bend. In this exercise first one foot is advanced and then the other, and the work is continued until at least twenty trials have been made.

Exercise IX. This is excellent to make the body supple and should be practiced diligently. Figure VI illustrates nicely just the position to be maintained. The weight rests on one foot and the toe of the other just misses the ground, the limb being held stretched out as far as possible, while a rotary motion of the entire body is practiced until a semi-circle is described.

This work may be done first with one foot extended, then the other, and in time will be found very easy.

Exercise X. In this, the practice of balance is made possible by taking pose seen in Figure VII and by attempting to touch the floor with a handkerchief in the hand on same side that knee is kept rigid, while the other hand is held in such a manner that balance may be maintained.

This will need to be attempted many times before success crowns one's efforts.

Of course there are countless changes on the exercises enumerated, as well as many that are entirely different. It would require so much time to perform all of them that not one person in a hundred would even dream of attempting them, hence just those most practical have been given.

In beginning, perhaps twenty minutes day and night will be required in order to perform the work well. After some little practice, twenty or twenty-five minutes will be quite sufficient for this purpose. It must be remembered in this work that symmetrical development means the equal development of all parts of the body. Hence in exercising

there can be no favoritism shown, but, instead, the work must be done as directed. In this way every muscle will be sufficiently employed. The saying that "it is not what we know, but what we do with what we know that makes success in business, love or health," is fully exemplified in this work of developing the body. Perseverance is a most necessary part of any attempt of this kind and will make the results exactly what they are desired to be.

N. B.—It has been the aim of the author to make this book a practical method of instruction for all women who wish to work correctly. Any points that are not clearly understood will be cheerfully explained to all who address their communications to the McIntosh Battery and Optical Co., 39 W. Randolph Street, Chicago, Ill.

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